

Florida Onsite Sewage Nitrogen Reduction Strategies Study

TASK C.17 PROGRESS REPORT

S&GW Test Facility Data Summary Report No. 2

Prepared for:

Florida Department of Health
Division of Disease Control and Health Protection
Bureau of Environmental Health
Onsite Sewage Programs
4042 Bald Cypress Way Bin #A-08
Tallahassee, FL 32399-1713

FDOH Contract CORCL

October 2012

Prepared by:



In Association With:







S&GW Test Facility Monitoring Data Summary Report No. 2

1.0 Background

Task C of the Florida Onsite Sewage Nitrogen Reduction Strategies Study includes monitoring at field sites in Florida to evaluate nitrogen reduction in soil and groundwater, to assess groundwater impacts from various onsite wastewater systems, and to provide data for parameter estimation, verification, and validation of models developed in Task D. The controlled pilot-scale testing at the Gulf Coast Research and Education Center (GCREC) soil and groundwater (S&GW) test facility is being monitored for a range of operating conditions and to determine mechanisms critical for nitrogen reduction. The Task C.5 QAPP documents the objectives, monitoring framework, sample frequency and duration, and analytical methods to be used at the GCREC S&GW test facility.

2.0 Purpose

This data summary report documents data collected from the second S&GW test facility monitoring and sampling event conducted August 20 through August 27, 2012. This monitoring event consisted of measurement of flowrates dosed to the system, groundwater elevation measured within the standpipe piezometers, measurement of field parameters, and collection of unsaturated and groundwater samples and their analyses by a NELAC certified laboratory.

3.0 Materials and Methods

3.1 Project Site

The S&GW test facility is located at the University of Florida Gulf Coast Research and Education Center (GCREC) in southeast Hillsborough County, Florida. The specially designed pilot-scale test areas are representative of typical mounded onsite sewage treatment and disposal systems and enables controlled testing and evaluation of nitrogen reduction in soil and groundwater. Each test area consists of the above ground mound system to which effluent is dosed. Four test areas were established, to which either septic tank effluent (STE) or aerobic treatment unit (ATU) effluent was delivered to the mound/soil system via a pressure dosed mound with a gravel trench or a mound with drip dispersal system (Table 1). In addition to the mound/soil systems, two in-situ

passive nitrogen reduction stacked biofilter systems are being tested specifically for wastewater treatment performance (Table 1 TA5 and TA6). The source of the influent wastewater is the septic tank effluent from the existing onsite wastewater system serving the GCREC (Figure 1). As shown in Figure 1, two separate feed systems supply the test areas with water, each system supplies either STE or aerobic treatment unit (ATU) effluent to 3 test areas. The treatment unit preceding three of the test areas shown in Figure 1 is a 500 gpd aerobic treatment unit (ATU) with a continuous air supply. Details of the design and construction of the S&GW test facility were presented previously in Task C.6, C.7, C.8, C10, C.11, C.12, A.15 and A.17 documents.

Table 1 S&GW Test Facility Test Areas

Test Area ID	Effluent Quality	Design HLR (gpd/ft ²)	Soil Treatment Unit Design
TA1	STE	0.8	pressure dosed mound ¹ , gravel trench
TA2	ATU effluent	0.8	pressure dosed mound ¹ , gravel trench
TA3	STE	0.8	mound with drip dispersal
TA4	ATU effluent	0.8	mound with drip dispersal
TA5	STE effluent (Task A PNRS II)	0.8	mounded drip dispersal, vertically stacked biofilter; nitrification media over denitrification media
TA6	ATU effluent (Task A PNRS II)	0.8	mounded drip dispersal, vertically stacked biofilter; nitrification media over denitrification media

¹pressure dosed via drip tubing in gravel trench to maintain uniform application along trench length.

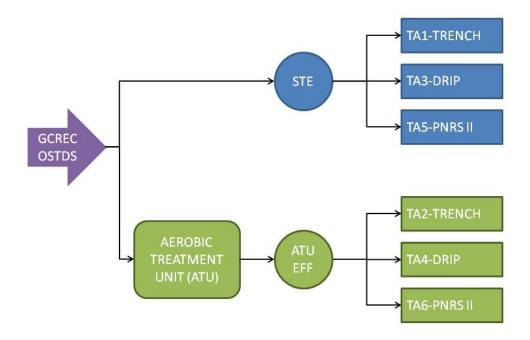


Figure 1 S&GW Test Facility System Schematic

3.2 Modifications to S&GW Test Facility

The results of Sample Event No. 1 and careful observation of the S&GW test facility were used to formulate recommendations for modifications to the test systems. The modifications that were made following Sample Event No. 1 are presented in this section.

3.2.1 Aerobic Treatment Unit (ATU)

Sample event No. 1 indicated incomplete nitrification in the ATU, utilized as the source of nitrified effluent. Therefore, the ATU was seeded with activated sludge from a wastewater treatment plant to promote the growth of nitrifying bacteria. The aeration chamber of the ATU was seeded with approximately 200 gallons of activated sludge from the Plant City WWTP on August 1, 2012. The aeration chamber was seeded with an additional 10 gallons of activated sludge from the Falkenburg AWTP on August 17, 2012. Based on nitrate/nitrite HACH test strips, nitrification then started to increase within the aeration chamber.

3.2.2 PNRS II Infiltrator Standpipe Piezometers

The standpipe piezometers installed downgradient of the infiltrator systems for both PNRS II test areas (TA5 and TA6) showed NOx-N concentrations were above 10 mg/L in the first sample event. This was surprising since final effluent from both vertically stacked biofilters had TN less than or equal to 4 mg/L. The background piezometers surrounding the test areas indicated that there is potentially residual nitrogen from an unknown source in the shallow groundwater. To better determine whether the nitrogen is wastewater derived within these piezometers, sucralose (Splenda) analyses were included in this sample event. If the source wastewater contains sucralose, then this parameter could prove useful in determining if background, or other sample point nitrogen concentrations, were impacted by wastewater sources.

3.3 Monitoring and Sampling Locations and Identification

Each test area is monitored for operational conditions, unsaturated and saturated nitrogen concentrations, soil properties, groundwater properties, and weather conditions. The PNRS II systems are monitored primarily for wastewater treatment performance, especially related to nitrogen reduction, and are not monitored as intensely for soil and groundwater parameters.

3.3.1 Unsaturated Zone Monitoring

The test areas are equipped with varying levels of unsaturated and shallow saturated zone monitoring instrumentation. The instrumentation includes suction lysimeters, stainless steel pan lysimeters, soil moisture probes, and tensiometers located at various depths below the bottom of the gravel trenches or below the drip emitters. A complete list of all installed monitoring devices and associated sample identification is included in Appendix A.

3.3.2 Saturated Monitoring

Saturated zone monitoring includes groundwater quality, depth of groundwater table, and gradient (i.e. water level contours). A sampling network for groundwater screening was developed for each of the test areas. Transect lines A through U are parallel to the northern edge of the mound and increase (higher letter identification) moving southward from the mound. Transect lines 0 through 20 (numbered from east to west) are perpendicular to the northern edge of the mound. Groundwater monitoring points were installed in November 2011, March 2012, and May 2012. Standpipe piezometers were installed using either hand or drilling methods. Standpipe piezometers consist of either ¾-in., 1-in., or 2-in. diameter PVC with 1-ft, 2.5-ft, 5-ft, or 10-ft long 0.010 slot PVC screens and PVC riser extending to the ground surface (refer to the Task C QAPP and Task C.10/C.11/C.12 Progress Report for additional detail).

3.3.3 Sample Locations and Identification

Each monitoring location has been assigned a unique identification indicating the type of monitoring point (LY = lysimeter, PZ = standpipe piezometer, T = tensiometer, SM = soil moisture, OBS = observation port, etc.), grid location (self explanatory), and depth below ground surface (bottom of the well screen in feet). For example TA1-PZ-11-J4 is a test area 1, standpipe piezometer sampler located 11' below natural ground surface on the grid at J4. Detailed schematics of the STE systems and ATU effluent systems are provided in Appendix A. Figure 2 depicts a typical schematic of the test area instrumentation. Figure 3 shows a photograph of the instrumented test area 3 with installed \(^3\fmathcap{4}\)-in. diameter PVC standpipe piezometers downgradient of the test area. A complete list of all installed monitoring devices is included in Appendix A.

Figure 2
Typical Instrumentation of Test Area, Top View (example Test Area 3)

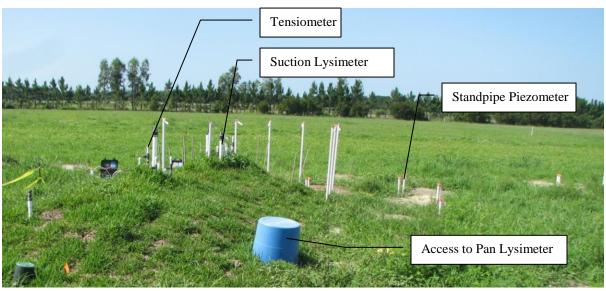


Figure 3
Photo of Instrumented Test Area 3

3.4 Operational Monitoring

Operational monitoring conditions include effluent quality, calculation of the hydraulic loading rate to the soil, and ponding on the soil infiltrative surface or at the fill/natural soil interface.

3.4.1 Flow Monitoring

The feed and return flows were measured, recorded, and adjusted as necessary to maintain flow rates consistent with the experimental design following the sample event. Each of the two systems has wastewater flow measured via two flow meters; one (1) flow meter located on the feed line to the three test areas, and; one (1) flow meter located on the return line to the dose tank. The flow meters were installed in November 2011. Table 2 summarizes the recorded wastewater flow data since start-up occurred May 9, 2012. The drip lines are automatically scoured (field flushed) every 25 dosing cycles. The field flush volume bypasses the return flow meter but not the feed flow meter; therefore the field flush volume must be accounted for when determining the dosed volume (Table 2).

The target dose volume to each of the test areas is 32 gallons per day which equates to 96 gallons per day for each dosing system. The total recorded flow for the STE system was within the 15% operational target that is considered acceptable. The ATU system was within the operational target (-0.4%) following the change in dose cycle time from 15 minutes to 11.66 minutes prior to the sample event.

Table 2 S&GW Test Facility Measured Wastewater Flow Data

	Flow Meter Totalized Feed to Mounds (gallons)	Flow Meter Totalized Return from Mounds (gallons)	Number of Field Flush Occurrences for time period (#)	Average Recorded Flow (gpd)	RE% [Measured- Target]/ Target ⁴ (%)	Average Recorded Flow since start-up (gpd)	
STE System							
5/9/12 2:35 PM	13,733.08	5,188.14					
6/18/12 3:10 PM	20,987.62	8,620.71	9 ¹	93.36	-2.8%		
7/18/12 9:42 AM	25,535.66	10,270.72	7 ¹	95.11	-0.9%	94.10	
8/20/12 2:15 PM	30,410.69	11,466.12	8 ¹	108.58	13.1%	98.77	
ATU System							
5/9/12 3:22 PM	38,415.90	33,861.96					
6/18/12 3:05 PM	63,382.59	53,711.43	9 ²	121.15	26.2%		
7/18/12 9:35 AM	78,364.51	65,072.22	7 ²	114.51	19.3%	118.32	
8/3/12 10:45 AM	86,970.09	71,635.06	4 ²	119.73	24.7%	118.58	
August 3, 2012 at 11:00 am: Revised dose cycle time to 11.66 minutes from 15 minutes							
8/20/12 2:33 PM	94,220.74	77,093.73	5 ³	95.61	-0.4%		

¹STE system additional field flush cycle volume is 9.5 gallons

3.4.2 Meteorological Monitoring

A weather station is located at the GCREC facility with weather conditions recorded every minute and stored on a private website. Table 3 provides the recorded meteorological data daily averages leading up to and during the sample event. Appendix B provides a summary table of the average daily recorded meteorological data since the previous sample event.

Table 3
Meteorological Data Daily Averages Measured August 15 through August 27, 2012

²ATU system additional field flush cycle volume is 30.3 gallons

³ATU system additional field flush cycle volume following dose cycle time revision is 24.6 gallons

⁴Target flow is 96 gpd.

Date	Temp Avg 60 cm (°F)	Temp Avg 2m (°F)	Temp Avg 10 m (°F)	Temp Soil Avg -10 cm (°F)	Dewpoint Avg 2m (°F)	Relative Humidity Avg 2m (%)	Rain Total 2m (in)	Wind Speed Avg 10m (mph)	ET (in)
15-Aug-12	80.58	80.79	80.74	82.76	74.91	84	0	3.32	0.16
16-Aug-12	81.40	81.63	81.41	83.85	76.44	85	0.04	3.75	0.17
17-Aug-12	79.67	80.28	80.20	83.54	76.26	88	0	3.67	0.12
18-Aug-12	75.37	76.04	75.98	81.85	74.93	96	0.39	3.88	0.07
19-Aug-12	80.49	80.90	80.45	82.23	75.93	86	0.13	7.20	0.18
20-Aug-12	81.21	81.51	80.96	83.33	75.07	82	0.02	7.38	0.19
21-Aug-12	78.29	78.51	77.94	83.17	73.78	87	1.66	8.28	0.16
22-Aug-12	74.11	74.50	74.23	79.00	72.60	94	3.89	5.75	0.10
23-Aug-12	78.81	79.13	78.92	79.06	72.80	83	0	3.66	0.16
24-Aug-12	79.61	80.00	79.60	80.80	73.64	83	0	6.28	0.18
25-Aug-12	78.88	79.34	78.85	81.43	72.15	80	0	9.68	0.16
26-Aug-12	76.86	77.55	77.21	80.76	75.23	93	0.74	12.83	0.08
27-Aug-12	77.85	78.52	78.20	79.45	77.04	95	2.37	14.50	0.09

3.4.3 Soil Moisture Monitoring

In situ soil tension and soil moisture measurements are collected for model development in Task D. Soil moisture tension is monitored in two test areas (TA1 and TA3) in two locations (center and south side of the mound). Tensiometers are installed at 5 depths as specified in Appendix C. Tensiometers have a ceramic cup and tube assembly equipped with a pressure transducer. The pressure transducer allows for precise measurement of the soil water potential. The tensiometers are automated to enable recording of soil moisture tension at 15 minute intervals to evaluate short-term changes in soil moisture status associated with wastewater dosing events. The daily averages since start-up are presented in Appendix C. Appendix C, Figures C.1 and C.2 summarize TA1 and TA3, respectively, 15 minute interval data preceding and during the sample event for soil tension, rainfall, temperature and dose occurrence.

Soil moisture is measured through SentekTM sensor access tubes. Volumetric soil moisture content is measured by responses to changes in the dielectric constant of the soil by inserting the sensor probe into the access tube (Figure 4) which takes readings every 10 cm the entire length of the access tube (Appendix D). The 0 cm reading is at the infiltrative surface of each test area. No ponding was observed within the test area observation ports.

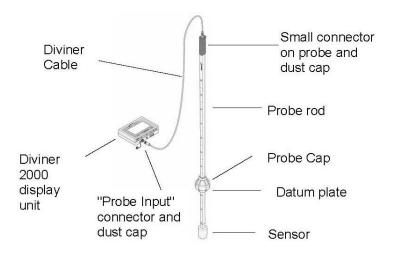


Figure 4 SentekTM Diviner 2000

Source: Diviner 2000 User Guide V1.5

3.5 Soil Characteristics

During the instrumentation of the S&GW test facility, soil cores were collected at two locations; MM (located between TA2 and TA5) and TT (north of the tracer test area). At location MM a continuous soil core was collected to the confining Hawthorn clay layer. The shallow soil cores will provide information on vadose zone properties, and the deep soil core will provide a general idea of the soil properties within the aquifer. The information will be used when determining appropriate parameters to be used in model development. In addition, a test pit was dug south of the S&GW test facility and east of the GCREC mound into the spodic layer approximately 6 feet below ground surface (Figure 5).

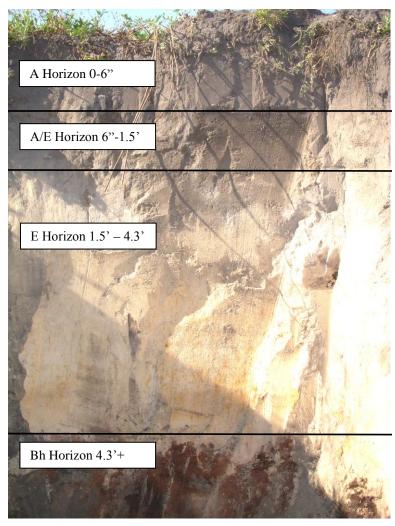


Figure 5
Photograph of Test Pit Soil Profile

3.6 Groundwater Elevation Measurements

Groundwater level measurements are used to determine hydraulic gradients and directions of groundwater flow. Groundwater levels were measured by inserting into monitoring wells a hand-cranked steel tape graduated in feet, to the nearest 0.01 ft. These measurements are then converted to groundwater surface elevations by using the surveyed elevation of the top of the monitor well casing.

3.7 Water Quality Sample Collection and Analyses

Septic tank effluent, ATU effluent, groundwater, and soil moisture samples were collected August 20, 2012 through August 27, 2012 for water quality analysis. A peristaltic pump was used to collect STE and ATU effluent by placing the suction inlet tubing in the mid-section of the clear liquid phase in the effluent holding tanks. Similarly, sample was collected from the PNRS II Tank 1, which supplies STE to the S&GW test facility ATU and STE dose tank. The effluent was directed into the analysis-specific containers supplied by the analytical laboratory. Field parameters (temperature (Temp), pH, specific conductance (SC), oxidation-reduction potential (ORP) and dissolved oxygen (DO)) were measured using portable electronic probes with probe tips placed directly into the tanks.

Groundwater samples were obtained using a peristaltic pump and dedicated standpipe piezometer tubing. Prior to groundwater sample collection, the piezometer was micropurged using low-flow purging and sampling methods. Micropurging continued until water quality indicators (temp, pH, SC, DO and turbidity) were stabilized (three consecutive measurements within the limits). Groundwater sample was then collected into the analysis-specific containers.

Soil moisture samples from the suction lysimeters were also collected using a peristaltic pump and dedicated tubing. The tubing routed the samples directly into analysis-specific containers after sufficient flushing of the tubing had occurred. Field parameters (Temp, pH, SC, ORP, DO) were then recorded in an external reservoir.

The analysis-specific containers were supplied by the analytical laboratory and contained appropriate preservatives. The analysis-specific containers were labeled, placed in coolers and transported on ice to the analytical laboratory. Each sample container was secured in packing material as appropriate to prevent damage and spills, and was recorded on chain-of-custody forms, provided in Appendix E, supplied by the laboratory.

In addition, equipment blank, field blank, and field sample duplicates were taken. The equipment blank was collected by pumping deionized water (provided by the laboratory) through the cleaned pump tubing. These samples were then analyzed for the same parameters as the GW samples. One field blank was collected by filling sample containers with deionized water that had been transported from the laboratory into the field along with other sample containers. The field sample duplicates were collected immediately subsequent to the regular samples.

All samples were analyzed by the laboratory for chloride, total Kjeldahl nitrogen (TKN-N), ammonia nitrogen (NH $_3$ -N), and nitrate/nitrite nitrogen (NO $_x$ -N). Additionally, for the effluent samples and some of the water samples total alkalinity, carbonaceous biochemical oxygen demand (CBOD $_5$), total phosphorus (TP), total solids (TS), total suspended solids (TSS), fecal coliform (fecal), anions and cations were included. At some of the water sample locations chemical oxygen demand (COD) and dissolved organic carbon (DOC) were included. In addition, the two in-situ passive nitrogen reduction mounded systems (TA5 and TA6) samples included sulfate and hydrogen sulfide. To assist in determination of whether certain monitoring locations are impacted by wastewater, sucralose was included at 11 sample locations. All analyses were performed by an independent and fully NELAC certified analytical laboratory (Southern Analytical Laboratory and FDEP). Table 4 lists the analytical parameters, analytical methods, and detection limits for these analyses.

Table 4
Analytical Parameters, Method of Analysis, and Detection Limits

Analytical Farameters, Method of Analys		Laboratory
Analytical Parameter	Method of Analysis	Detection Limit (mg/L)
Total Alkalinity as CaCO ₃	SM 2320B	2 mg/L
Chemical Oxygen Demand (COD)	EPA 410.4	10 mg/L
Total Kjeldahl Nitrogen (TKN-N)	EPA 351.2	0.05 mg/L
Ammonia Nitrogen (NH ₃ -N)	EPA 350.1	0.005 mg/L
Nitrate/Nitrite Nitrogen (NO _X -N)	EPA 300.0	0.02 mg/L
Total Phosphorus	SM 4500P-E	0.01 mg/L
Carbonaceous Biological Oxygen Demand (CBOD ₅)	SM 5210B	2 mg/L
Total Solids (TS)	EPA 160.3	0.01% by wt
Total Suspended Solids (TSS)	SM 2540D	1 mg/L
Total Organic Carbon (TOC)	SM 5310B	0.5 mg/L
Dissolved Organic Carbon (DOC)	SM 5310B	0.5 mg/L
Fecal Coliform (fecal)	SM 9222D	2 ct/100 mL
Anions		
Fluoride	EPA 300.0	0.01 mg/L
Chloride	EPA 300.0	0.05 mg/L
Nitrate-N	EPA 300.0	0.01 mg/L
Nitrite-N	EPA 300.0	0.01 mg/L
Orthophosphate-P	EPA 300.0	0.01 mg/L
Sulfate	EPA 300.0	0.20 mg/L
Cations		
Boron	EPA 200.7	0.05 mg/L
Calcium	EPA 200.7	0.01 mg/L
Iron	EPA 200.7	0.02 mg/L
Magnesium	EPA 200.7	0.01 mg/L
Manganese	EPA 200.7	0.001 mg/L
Potassium	EPA 200.7	0.01 mg/L
Sodium	EPA 200.7	0.01 mg/L
Hydrogen Sulfide (unionized)	SM 4550SF	0.01 mg/L
Sulfide	SM 4500SF	0.01 mg/L
Sucralose	EPA 8321B	0.01 µg/L

4.0 Results

4.1 Soil Characteristics

During the instrumentation of the S&GW test facility, split spoon soil samples were collected at two-foot intervals at two locations MM; (located between TA2 and TA5) and TT (north of the tracer test area). At location MM a continuous soil core was collected to the confining Hawthorn clay layer. In addition, a test pit was dug, at a location south of the S&GW test facility and east of the GCREC mound, into the spodic layer approximately 6 feet below ground surface. The soil descriptions are presented in Table 5. The top few inches at the site are typically a darker, brown or grey fine sandy soil, followed by a light-colored, grey and/or pale yellow fine sand. Mottling is commonly visible between 4 to 5 feet below the ground surface. The spodic layer is approximately 2.5 and 6.75 feet thick at the TT and MM locations, respectively; and the soil below the spodic layer is a light or yellowish brown, fine to medium sand (Table 5). The Hawthorne clay is considered a confining layer at the site and lies approximately 27 to 30 feet below the ground surface.

Subsequently, hand methods were used to better determine the actual elevation of the spodic layer (Table 6) at several additional locations across the site. Figure 6 illustrates the top elevation of the spodic layer at the site as determined by the hand methods.

Table 5
May 2012 Soil Core Descriptions

Grid Location	Identifier	Approximate Surface Elevation ¹ (ft)	Depth bgs (ft)	Description
North of tracer test #2	TT	131.5	2-2.5'	10YR3/1 fine sand
area			2.5-3.5'	10YR3/2 fine sand
			3.5-5.5	10YR7/2 fine sand
			5.5-7'	Transition to Bh (spodic horizon)
			7-9.5'	10YR2/2 fine sand Bh (spodic horizon)
			9.5-14'	10YR5/3 fine sand
			14-15.5'	10YR4/3 fine sand
			15.5-16'+	10YR4/4 fine sand
Between TA2 and TA5	MM	130.5	0-2'	A Horizon top soil
			2.5-5.75	10YR6/3 fine sand
			5.75-12.5	10YR2/2 fine sand Bh (spodic horizon)
			12.5-17	10YR4/4 fine sand
			17-27'	10YR5/4 fine sand
			27'+	Hawthorne clay
Test pit	TP	127.0	0-6"	A horizon
south of the S&GW test facility east of the GCREC mound			6"-1.5'	A/E horizon
			1.5-4.3	E horizon
			4.3'+	Bh spodic horizon

¹Elevation above mean sea level based on NGVD 1929

Table 6
The Top Elevation of the Spodic Horizon as Determined by Hand Methods

Location	Elevation ¹ (ft)	Location	Elevation ¹ (ft)	
SB-1	122.47	SB-4	123.40	
SB-2	122.97	SB-5	121.96	
SB-3	124.20	SB-6	121.96	

¹Elevation above mean sea level based on NGVD 1929

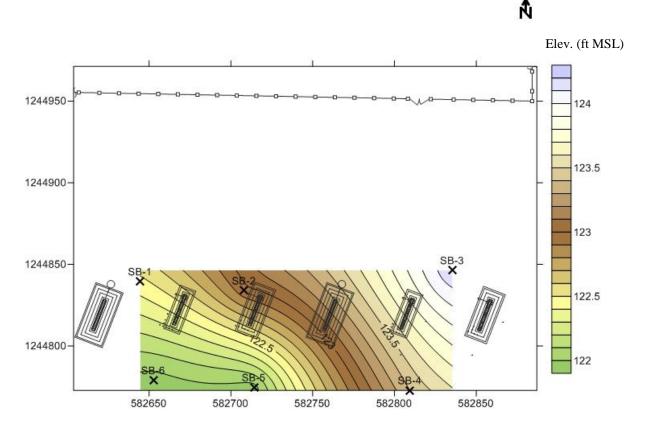


Figure 6
Elevations of spodic (Bh) horizon as determined by hand methods (the locations of the soil borings are provided for reference)

The MM, TT and test pit soil samples were submitted to the University of Florida IFAS Analytical Services Laboratories and University of Florida SWS Mineralogy Core Laboratory for analysis. The soil samples were analyzed for pH, organic matter, cation exchange

capacity (CEC), ammonia, nitrate, TKN, phosphorus, potassium, calcium, magnesium, and sodium concentrations as well as particle size distribution summarized in Table 7. The complete soil data set is included Appendix F.

Table 7
Soil Grain Size Distribution in Percent (%)

Soil Grain Size Distribution in Percent (%)								_		
	Depth		Sa	and Fractions	(%)			Total (%)		Texture Class
ID	Bgs	Very Fine	Fine	Medium	Coarse	Very Coarse	Sand	Silt	Clay	
	(ft)	0.05- 0.1 mm	0.25- 0.1 mm	0.25-0.5 mm	0.5-1.0 mm	1.0-2.0 mm	0.05-2 mm	0.002- 0.05 mm	<0.002 mm	
	2-3'	8.4	45.9	31.7	6.1	0.8	95.6	1.2	3.2	Sand
	3.5-5.5'	7.9	44.3	35.6	7.7	1.1	96.4	1.2	2.4	Sand
	7.5-9.5	5.4	55.0	26.7	5.0	1.3	93.0	2.9	4.1	Fine Sand
	10.5-12'	3.7	49.9	30.3	7.2	3.5	95.0	1.8	3.2	Sand
TT	12-14'	3.2	52.4	29.0	6.5	3.4	94.9	2.7	2.4	Fine Sand
	14-15.5'	1.1	62.9	28.6	4.2	1.1	98.1	0.3	1.6	Fine Sand
	14-15.5'	1.6	65.2	26.2	4.0	1.1	98.2	0.1	1.6	Fine Sand
	15.5-16'	4.8	51.1	33.3	4.7	1.2	95.6	2.8	1.6	Fine Sand
	2-2.5'	7.9	45.4	30.2	6.3	1.1	95.6	1.2	3.2	Sand
	2.5-4'	7.9	47.3	29.4	8.2	1.6	94.9	3.4	3.2	Sand
	4-5'	9.3	47.1	25.7	6.4	1.5	90.3	8.1	1.6	Sand
	6-7'	3.1	55.2	28.5	5.2	2.4	95.1	4.0	1.6	Fine Sand
	7-8'	3.7	50.9	34.6	4.6	0.3	95.6	2.7	1.7	Fine Sand
	8-9'	2.3	35.3	47.7	5.1	0.4	93.7	5.4	0.8	Sand
MM	9-10'	3.6	25.1	60.8	5.4	0.7	96.0	1.5	2.5	Sand
IVIIVI	12.5-14'	1.8	35.3	54.2	4.5	0.6	96.7	3.3	0.0	Sand
	14.5-16'	2.9	38.9	42.1	5.4	1.8	91.3	6.1	2.5	Sand
	17-18'	3.4	40.7	37.9	7.1	1.5	90.7	9.3	BDL	Sand
	19-20'	1.6	35.3	51.1	7.1	1.5	96.4	1.2	2.4	Sand
	23-24'	1.2	29.4	52.8	8.1	0.6	91.9	5.7	2.4	Sand
	25-26'	2.0	43.2	38.8	0.7	0.8	89.3	9.1	1.6	Sand
	26-27'	1.3	37.6	48.6	7.1	1.1	95.6	2.7	1.6	Sand
	0-6"	10.1	49.4	29.2	5.3	1.0	94.9	1.0	4.1	Sand
Test	1'	6.8	47.4	34.0	7.1	1.2	94.6	2.2	3.2	Sand
Pit	3'	9.9	47.7	27.4	7.1	1.7	93.9	3.6	2.5	Sand
	6'	4.7	44.7	39.1	6.4	1.3	96.3	1.2	2.5	Sand
	6'	4.8	45.8	35.1	5.5	1.6	92.8	5.5	1.7	Sand

4.2 Groundwater Levels

Figure 7 illustrates the surficial groundwater contours as derived from measurements within the standpipe piezometers on August 20 through August 23, 2012 representative of the second sample event. Table 8 shows the actual measured water levels. Monitoring well locations are shown on Figures A.1 and A.2 within Appendix A. There was significant rain immediately preceding and during the sample event which may partially ex-

plain the shape of the contour plot. By continued monitoring of the groundwater elevations, a clearer picture of the gradient at the site will be gained.

Table 8
Standpipe Piezometer Groundwater Level Measured

Standpipe Piezometer Groundwater Level Measured							
Identification/	Water Table Elevation ^{1,3,4} (ft)	Identification/	Water Table Elevation ^{1,3,4} (ft)				
Location	August 20 through 23, 2012	Location	August 20 through 23, 2012				
TA1-PZ-11-EF2	123.82	TA2-PZ-16-N7	123.06				
TA1-PZ-11-J4	123.76	TA2-PZ-09-I7	123.45 ²				
TA1-PZ-11-K4	123.71	TA2-PZ-16-I7	123.22				
TA1-PZ-11-L2	123.68	TA2-PZ-09-L8	123.20				
TA1-PZ-11-L3	123.72	TA2-PZ-16-L8	123.15				
TA1-PZ-11-L5	123.72	TA2-PZ-09-TU19	123.26				
TA1-PZ-09-N3	123.69	TA2-PZ-16-TU19	123.28				
TA1-PZ-16-N3	123.66	TA2-PZ-09-TU21	123.27				
TA1-PZ-09-07	123.17 ²	TA2-PZ-16-TU21	123.18				
TA1-PZ-16-07	123.66	TA3-PZ-11-EF2	125.82				
TA1-PZ-09-M9	123.70	TA3-PZ-11-I2	125.76				
TA1-PZ-16-M9	123.69	TA3-PZ-10-J5	125.74				
TA1-PZ-09-I7	124.77 ²	TA3-PZ-10-K5	125.69				
TA1-PZ-16-I7	123.68	TA3-PZ-11-L2	126.05 ²				
TA1-PZ-09-RS16	123.52	TA3-PZ-11-L3	125.71				
TA1-PZ-16-RS16	123.58	TA3-PZ-11-L4	125.68				
TA1-PZ-09-RS18	123.51	TA3-PZ-10-L5	125.69				
TA1-PZ-16-RS18	123.51	TA3-PZ-09-N3	125.70				
TA2-PZ-10-H5	123.26	TA3-PZ-16-N3	125.55				
TA2-PZ-10-J5	123.23	TA3-PZ-09-07	125.58				
TA2-PZ-10-K5	123.19	TA3-PZ-16-07	125.54				
TA2-PZ-10-L2	123.19	TA3-PZ-09-I7	125.72				
TA2-PZ-10-L3	123.14	TA3-PZ-16-I7	125.66				
TA2-PZ-10-L4	123.17	TA3-PZ-09-M9	125.68				
TA2-PZ-10-L5	123.19	TA3-PZ-16-M9	125.64				
TA2-PZ-10-L6	123.14	TA3-PZ-09-ST14	125.50				
TA2-PZ-09-M4	123.17	TA3-PZ-16-ST14	125.49				
TA2-PZ-16-M4	123.08	TA3-PZ-09-ST16	125.44				
TA2-PZ-09-N7	123.18	TA3-PZ-16-ST16	125.47				

Table 8 (continued) Standpipe Piezometer Groundwater Level Measured

	Standpipe Piezonieter Groundwater Level Measured							
Identification/	Water Table Elevation ^{1,3,4} (ft)	Identification/	Water Table Elevation ^{1,3,4} (ft)					
Location	August 20 through 23, 2012	Location	August 20 through 23, 2012					
TA4-PZ-10-J5	123.34	TA4-PZ-09-TU16	123.15					
TA4-PZ-10-K5	123.32	TA4-PZ-16-TU16	123.20					
TA4-PZ-11-EF2	123.53	TA5-PZ-I	125.60					
TA4-PZ-10-H5	123.38	TA6-PZ-I	125.03					
TA4-PZ-11-L2	125.19 ²	PZ01-BKG-09	126.48					
TA4-PZ-11-L3	123.33	PZ04-BKG-09	125.45					
TA4-PZ-11-L4	123.36	PZ24-BKG-26	125.00					
TA4-PZ-11-L5	123.32	PZ29-BKG-09	125.72					
TA4-PZ-11-L6	123.32	PZ30-BKG-16	125.70					
TA4-PZ-09-M4	123.32	PZ31-BKG-26	125.71					
TA4-PZ-16-M4	123.20	PZ33-BKG-16	126.05					
TA4-PZ-09-N7	127.00 ²	PZ34-BKG-26	126.05					
TA4-PZ-16-N7	123.46	PZ35-BKG-09	125.27					
TA4-PZ-09-I7	123.41	PZ36-BKG-16	125.22					
TA4-PZ-16-I7	123.65	PZ37-BKG-26	125.19					
TA4-PZ-09-L8	123.02	PZ38-BKG-09	123.77					
TA4-PZ-16-L8	123.12	PZ39-BKG-16	123.80					
TA4-PZ-09-TU14	123.24	PZ40-BKG-26	123.85					
TA4-PZ-16-TU14	123.26							

¹Elevation above mean sea level based on NGVD 1929
²Does not agree with other measurements nearby, most likely erroneous instrument reading
³During the period immediately preceding and during the sample event there was over 6 inches of rainfall
⁴Monitoring well locations are illustrated on Figures A.1 and A.2 within Appendix.

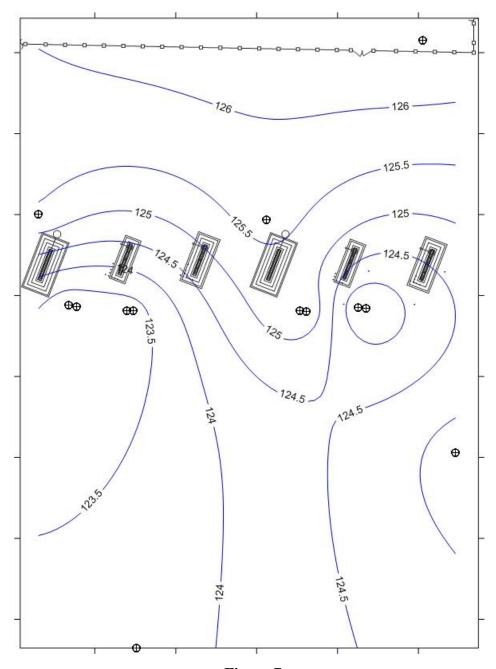


Figure 7
Surficial Groundwater Contours (Elev. ft above MSL)
August 20 through 23, 2012, representative of SE No. 2

⊕ denotes piezometers

4.3 Water Quality Analyses

4.3.1 Field Parameters

Field parameters (temperature, pH, dissolved oxygen (DO), and specific conductivity) were measured at all the sampling locations during the August 2012 sampling event. The complete field parameter data set is included in Appendix G.

4.3.2 Correlations

Correlations between nitrogen parameters were investigated to determine if simple to measure field parameters could continue to be used to locate contaminant plumes. Figure 8 and 9 show a scatter plot of nitrogen vs conductivity and chloride, respectively, for groundwater samples. While no strong linear correlation is observed for conductivity, the graph shows that increasing groundwater conductivity around the test systems is generally associated with increased groundwater nitrogen concentrations. A stronger linear correlation is observed for chloride (Figure 9).

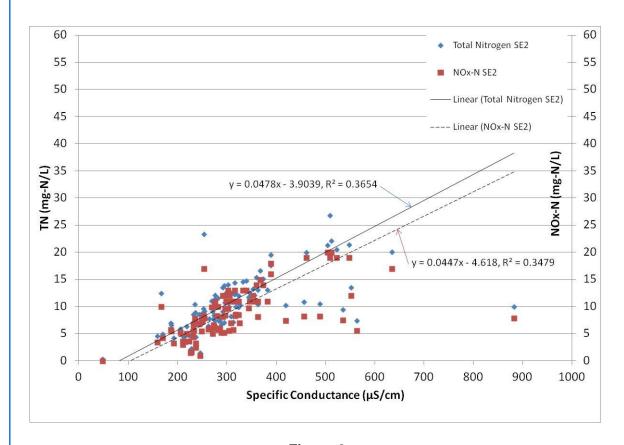
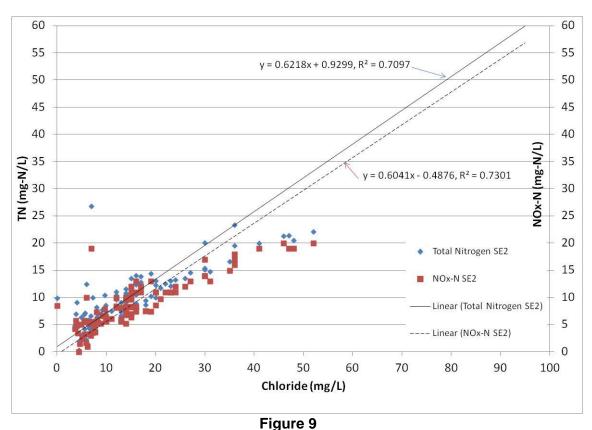


Figure 8
Correlation Between the Specific Conductance (uS/cm) and
Concentrations of NOX and TN (mg-N/L) for groundwater samples



Correlation Between the Chloride (mg/L) and Concentrations of NOX and TN (mg-N/L) for groundwater samples

4.3.3 Analytical Parameters

In addition to measuring field parameters, all samples were analyzed for chloride. Some of the samples were additionally analyzed for: total alkalinity (as CaCO₃), total Kjeldahl nitrogen (TKN-N), ammonia nitrogen (NH3-N), and nitrate/nitrite nitrogen (NOX-N), total organic carbon (TOC), dissolved organic carbon (DOC), chemical oxygen demand (COD), and cations and anions. The August sampling event provides insight into the development of nitrogen plumes from the test areas. The complete water quality analytical results for Sample Event No. 2 are listed in Table 1, Appendix G, and the statistical summary of the water quality is presented in Table 1, Appendix H. The laboratory report containing the raw analytical data is included in Appendix E.

4.3.3.1 Influent Water Quality

STE is pumped from the first GCREC septic tank to a holding tank near the test areas (PNRS II STE-Tank 1). A portion of the STE from this holding tank is directed to an aerobic treatment unit for nitrification, with the treated effluent held in a separate tank as the

source of the ATU effluent (ATU Effluent Pump Tank). A separate portion of the STE from the holding tank is directed to a separate tank as the source of the STE effluent (STE Pump Tank). The water quality characteristics of STE collected in Sample Event 2 were within the range that has been typically reported for Florida single family residence STE. The measured STE total nitrogen (TN) concentration was 64 mg-N/L. The STE pump tank and ATU effluent pump tank total nitrogen concentrations were 61 and 36 mg-N/L, respectively; and the NOX-N concentrations were 0.04 and 11 mg-N/L, respectively. The ATU has started to operate as intended in converting ammonium to oxidized nitrogen.

4.3.3.2 Unsaturated Zone Results

The test areas are equipped with varying levels of unsaturated and shallow saturated zone monitoring instrumentation. TA1, TA2, TA3 and TA4 instrumentation includes 2-inch diameter soil suction lysimeters (see Figure 2 for placement). The nitrogen results are summarized in Tables 9 through 12 for each of the test areas. All four test areas exhibit total nitrogen concentrations greater than 10 mg/L at a depth 42-inches below the infiltrative surface. The groundwater level was at approximately 60 inches below the infiltrative surface during this sample event.

Table 9
Test Area 1 (STE fed Trench System) Unsaturated Zone Monitoring

	TA1-LY-12-S	TA1-LY-24-C	TA1-LY-24-S	TA1-LY-42-S
	12" Below IS	24" Below IS	24" Below IS	42" Below IS
TKN, mg N/L	1.7	3.9	2.4	1.8
NH3, mg N/L	0.009	0.009	0.009	0.009
NOx, mg N/L	13	53	39	50
TN, mg N/L	14.7	56.9	41.4	51.8

Table 10
Test Area 3 (STE fed Drip System) Unsaturated Zone Monitoring

100	rest Area o (OTE rea Drip Oystern) Orisataratea Zone Monitoring							
	TA3-LY-12-S	TA3-LY-24-C	TA3-LY-24-S	TA3-LY-42-S				
	12" Below IS	24" Below IS	24" Below IS	42" Below IS				
TKN, mg N/L	1.0	2.0	0.97	1.9				
NH3, mg N/L	0.016	0.024	0.019	0.043				
NOx, mg N/L	1.5	32	15	9.6				
TN, mg N/L	2.5	34	15.97	11.5				

Table 11
Test Area 2 (ATU Eff fed Trench System) Unsaturated Zone Monitoring

	TA2-LY-12-S	TA2-LY-24-C	TA2-LY-24-S	TA2-LY-42-S
	12" Below IS	24" Below IS	24" Below IS	42" Below IS
TKN, mg N/L	3.6	3.9	4.2	2.2
NH3, mg N/L	0.009	0.009	0.009	0.009
NOx, mg N/L	38	42	50	37
TN, mg N/L	41.6	45.9	54.2	39.2

Table 12
Test Area 4 (ATU Eff. fed Drip System) Unsaturated Zone Monitoring

	TA4-LY-12-S	TA4-LY-24-C	TA4-LY-24-S	TA4-LY-42-S
	12" Below IS	24" Below IS	24" Below IS	42" Below IS
TKN, mg N/L	1	2.2	3.5	3.2
NH3, mg N/L	0.02	0.009	0.05	0.009
NOx, mg N/L	34	28	45	35
TN, mg N/L	35	30.2	48.5	38.2

4.3.3.2 Nitrate/Nitrite Concentrations with Groundwater Depth

SurferTM is a useful tool for contour mapping; however, it cannot project a 3-dimensional view of concentrations with depth. Therefore the concentrations of parameters were "lumped" from the different sampling locations into "slices" of similar depth, allowing the different "slices" to be compared.

Based on the distribution of points with depth, two "slices" were chosen for the ground-water data for test areas 1 through 4. The two slices were separated by elevation above sea level (NGVD29 datum). A **Surfer** schematic illustrating the "slices" of NOX concentration with depth from June 2012 for each test area are presented in Figures 10 through 13. A **Surfer** schematic illustrating the "slices" of NOX concentration with depth from August 2012 for each test area are presented in Figures 14 through 17. The maps

show contours of the concentrations as estimated using the "natural neighbor" gridding method in **Surfer**TM. This method was used because it did not extend results past data points, as was noted on previous project results. The shallow piezometer NOX results (Figures 10, 12, 14, 16) show that the test area plumes appear to be confined in a southwesterly direction from the center of each of the test areas. However, to better capture the eastern boundary of the plumes, it is recommended to install additional shallow piezometers. The deeper piezometers (Figures 11, 13, 15, and 17) indicate relatively low NOX concentrations at this point in time, similar to background levels (Figures 18, 19, and 20).



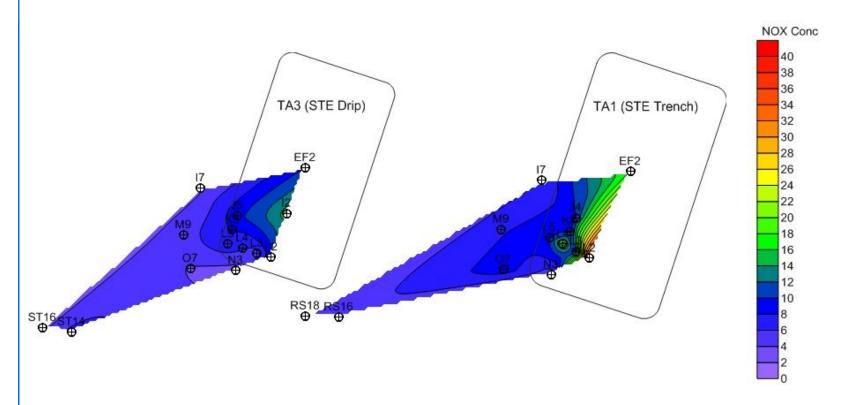


Figure 10
TA1 and TA3 Shallow Elev 118.5-124 ft above MSL (June 2012 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface



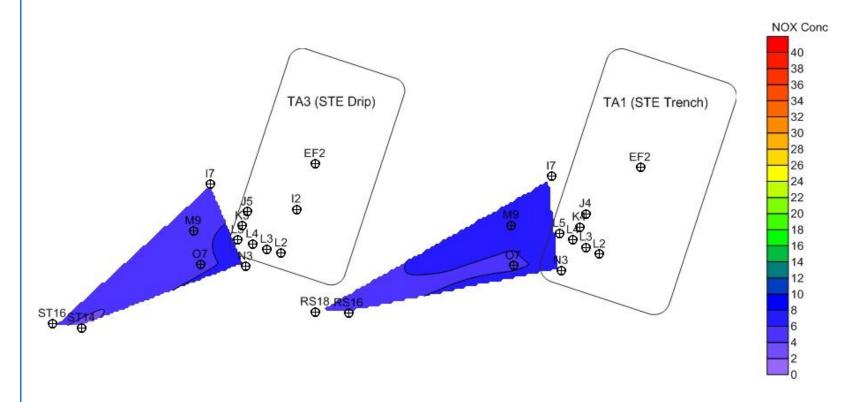


Figure 11
TA1 and TA3 Deep Elev 112-118.5 ft above MSL (June 2012 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface

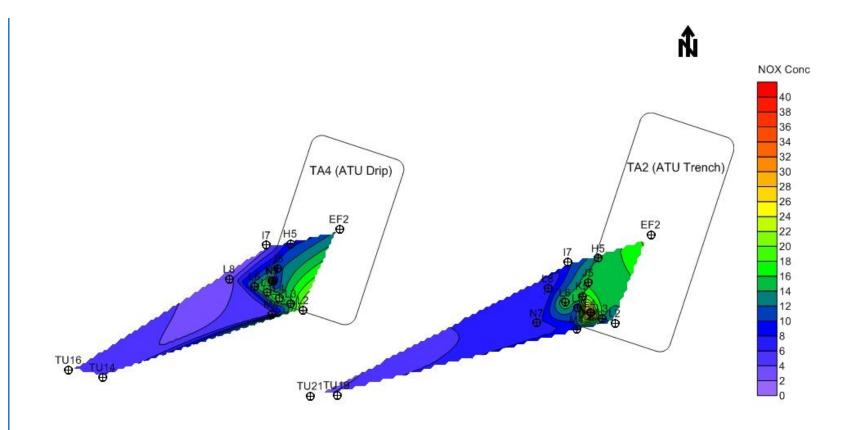


Figure 12
TA2 and TA4 Shallow Elev 118-124 ft above MSL (June 2012 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface

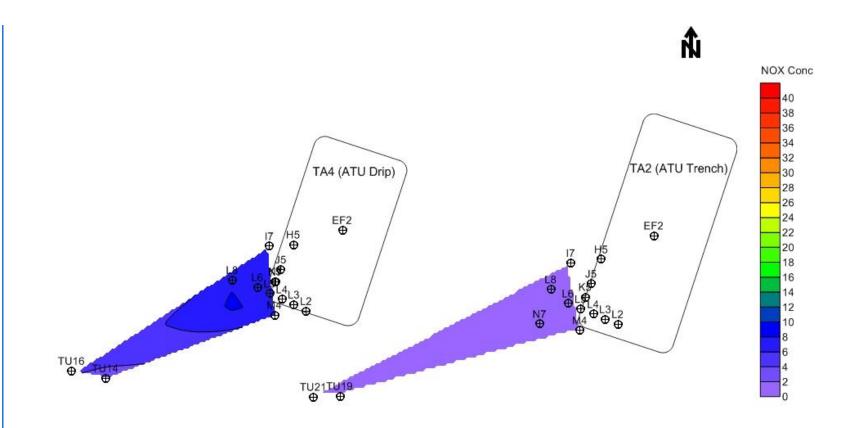


Figure 13
TA2 and TA4 Deep Elev 111-118 ft above MSL (June 2012 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface



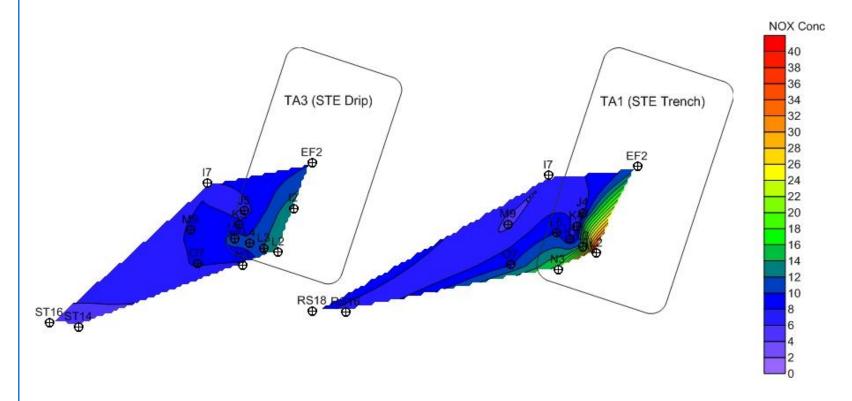


Figure 14
TA1 and TA3 Shallow Elev 118.5-126 ft above MSL (August 2012 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface



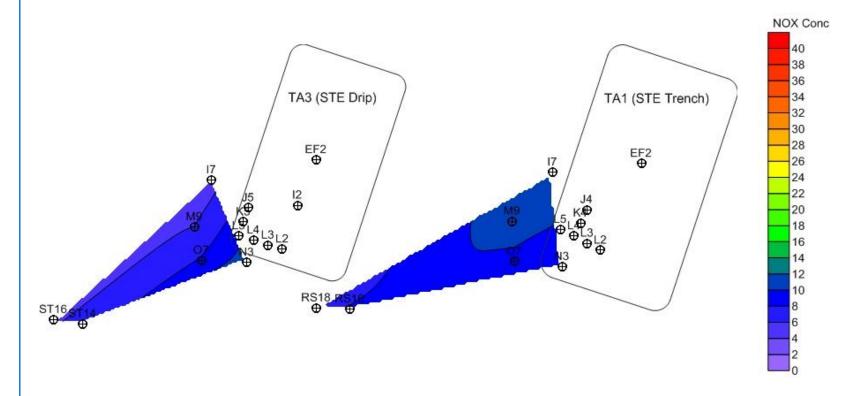


Figure 15
TA1 and TA3 Deep Elev 112-118.5 ft above MSL (August 2012 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface

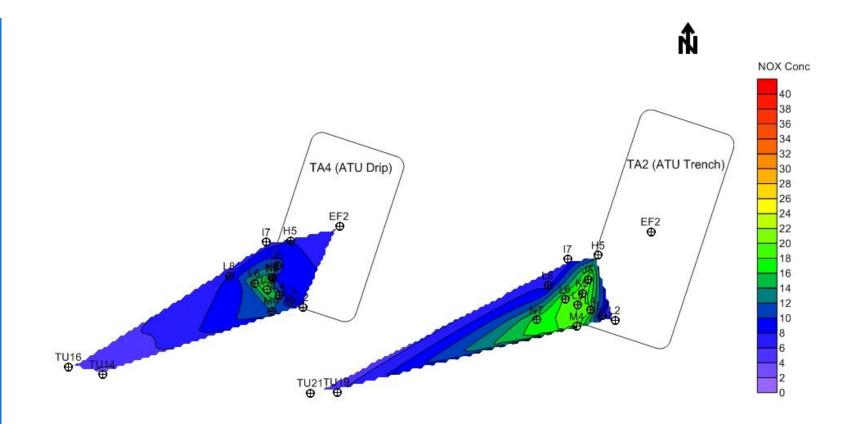


Figure 16
TA2 and TA4 Shallow Elev 117.5-125.2 ft above MSL (August 2012 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface

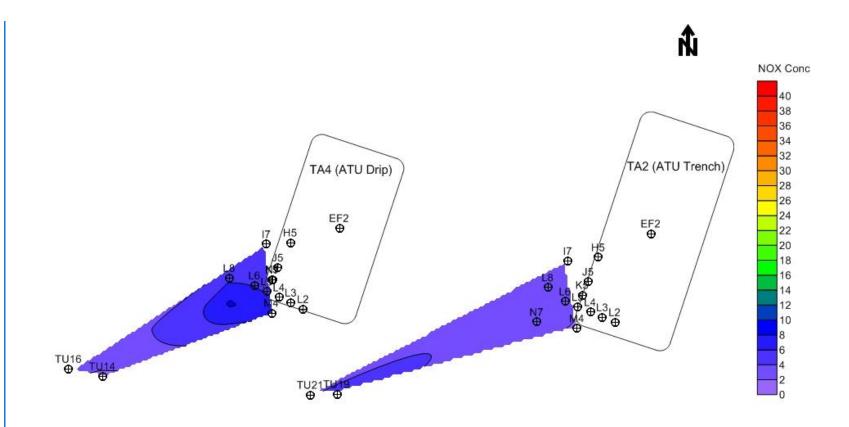


Figure 17
TA2 and TA4 Deep Elev 111-117.5 ft above MSL (August 2012 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface

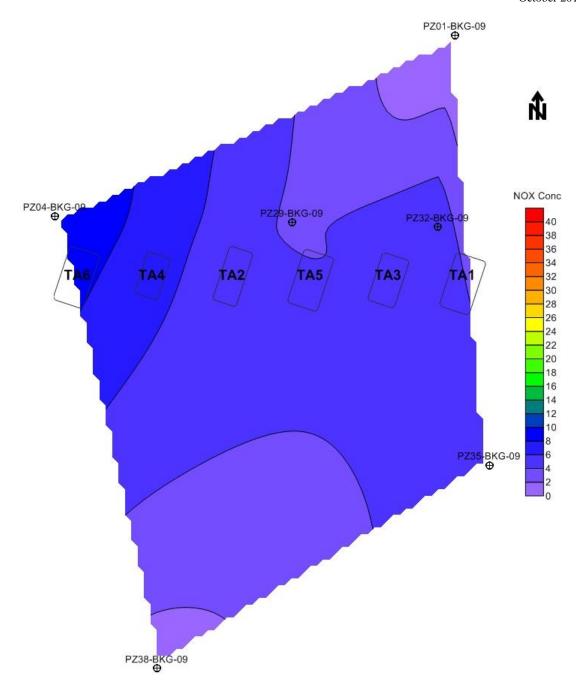


Figure 18

Background Shallow Elev 118-126.5 ft above MSL (August 2012 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface excluding samples below test areas



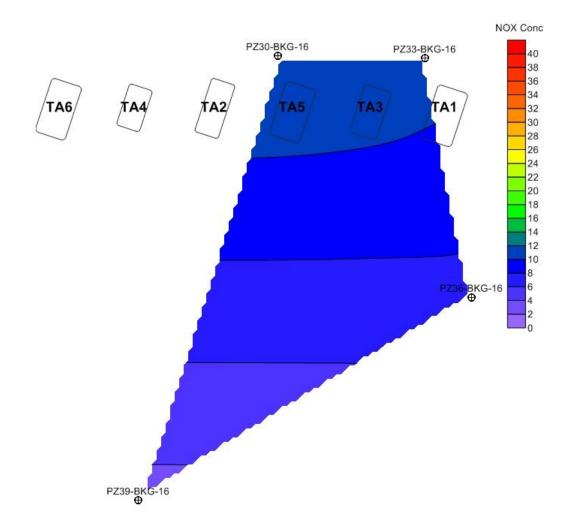


Figure 19
Background Middle Elev 110-118 ft above MSL (August 2012 Sample Event)
Schematic (using Surfer) illustrating NOX concentrations in the subsurface excluding samples below test areas

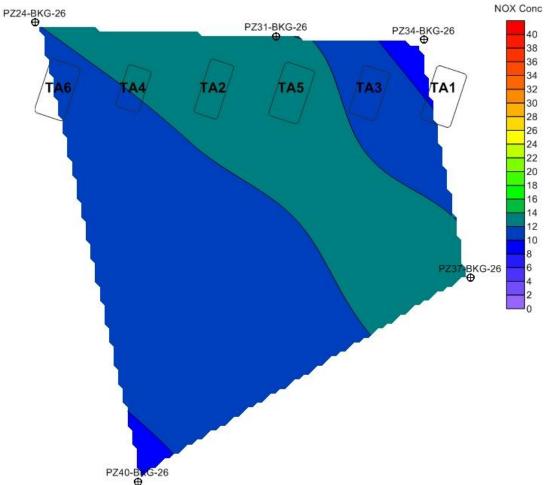


Figure 20 Background Deep Elev 101-110 ft above MSL (August 2012 Sample Event) Schematic (using Surfer) illustrating NOX concentrations in the subsurface excluding samples below test areas

4.3.3.3 PNRS II Vertically Stacked Biofilter Results

Test area 5 (TA5) and test area 6 (TA6) are the PNRS II in-ground vertically stacked biofilter systems being tested primarily for wastewater treatment. TA5 receives STE while TA6 should receive nitrified effluent, if the ATU is functioning properly. Effluent is dispersed above an 18-inch layer of mound sand (slightly limited sand). Underlying the sand is a 9-inch layer of lignocellulosic and sand media mixture above a 60-mil plastic liner. The liner effluent is conveyed to a denitrification tank containing elemental sulfur reactive media for additional treatment. The denitrified effluent is discharged to the natural soil via an infiltrator system.

Both test area denite tanks exhibited low effluent NOx-N of less than or equal to 0.05 mg/L and effluent SO₄ concentration of 120 mg/L for TA6 (there was not enough sample volume to run sulfate analysis for TA5). The liner effluent sample NOx-N concentrations were 5.9 and 2.8 mg/L for TA5 and TA6 respectively. The suction lysimeters (LY), installed at the sand and lignocellosic/sand media mixture interface, NOx-N concentrations were 23 and 2.7 mg/L, for TA5 and TA6 respectively. This suggests that significant nitrate removal was occurring within the lignocellulosic/sand media mixture prior to the denite tank containing the sulfur media. The nitrogen results are graphically displayed in Figures 21 and 22. A standpipe piezometer (PZ) was installed downgradient of the infiltrator system for both test areas. The NOx-N concentrations for the PZs were 5.3 and 20 mg/L for TA5 and TA6, respectively.

As discussed in Section 3.2.2, the background piezometers surrounding the test areas indicate that there is potentially residual nitrogen up-gradient of the test areas from an unknown source. To better determine whether the nitrogen is wastewater derived within these piezometers, sucralose (Splenda) analyses were included in this sample event. The influent wastewater (PNRS II STE - Tank 1) sucralose concentration was 27 µg/L, which indicates the source wastewater contains sucralose. Therefore, this parameter could prove useful in determining if background or other sample point nitrogen concentrations, were impacted by wastewater sources. The sucralose concentrations for the PZs were 5.10 µg/L and below the method detection limit for TA5 and TA6, respectively. The sucralose concentration was below the method detection limit for all six background piezometers analyzed for sucralose which include: PZ-29, 30, 31, 32, 33 and 34, all located upgradient of the test areas. Two piezometers located within the drip system test area monitoring networks which had indicated a wastewater impact in sample event 1, TA3-PZ-11-I2 and TA4-PZ-11-L2, sucralose concentrations were 4.3 and 0.51 µg/L and NOx-N concentrations were 14 and 10 mg/L, respectively. It appears that the TA5 piezometer may be impacted by wastewater, however the source of this impact is unclear at this time. This will be investigated further in subsequent monitoring events.

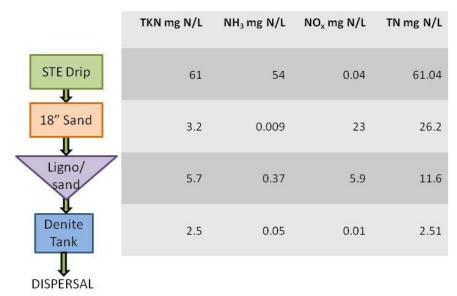


Figure 21
TA5 Graphical Representation of Nitrogen Results

	TKN mg N/L	NH ₃ mg N/L	NO _x mg N/L	TN mg N/L
ATU Eff Drip	25	23	11	36
18" Sand	1.9	0.009	2.7	4.6
Ligno/ sand	6.3	0.57	2.8	9.1
Denite Tank	4.0	0.14	0.05	4.05
DISPERSAL				

Figure 22
TA6 Graphical Representation of Nitrogen Results

5.0 S&GW Test Facility Data Summary Report No. 2: Summary and Recommendations

5.1 Summary

The results of this second sampling event served to identify the general trend of the nitrogen transformations and NOx plume for each of the test areas and provide the basis upon which to make adjustments and modifications to the future monitoring locations. Results of Sample Event No. 2 indicate that:

- ♦ The ATU started to operate as intended in converting ammonium to oxidized nitrogen; however, it is not nitrifying as effectively as desired.
- ♦ The background piezometers surrounding the test areas indicate that there is residual nitrogen up-gradient of the test areas from an unknown source. This will be investigated further in subsequent monitoring events.
- ♦ The nitrogen plume appears to be flowing in a southwesterly direction and similar to the groundwater contours.
- The PNRS II treatment in-ground vertically stacked systems are functioning as intended. Both TA5 and TA6 produced effluent NOx-N equal to or less than 0.05 mg/L.

5.2 Recommendations

The following recommendations are based on the existing available information in order to improve performance and data collected from the S&GW test facility. The project team will continue to evaluate all results including those that result from implementation of the recommendations and make further adaptations as needed (observational method). Following is a list with select recommendations to be addressed prior to the next sample event.

5.2.1 Aerobic Treatment Unit

As discussed in Section 4.3.3.1, the ATU is not operating as intended in converting all ammonium to oxidized nitrogen (NH3 concentration of 23 mg-N/L; NOx concentration of 11 mg-N/L). The performance of the aerobic treatment unit will continue to be evaluated and monitored.

5.2.2 PNRS II Infiltrator Standpipe Piezometers

As discussed in Section 4.3.3.3, the background piezometers surrounding the test areas indicate that there is residual nitrogen up-gradient of the test areas from an unknown source. To better determine whether the nitrogen is wastewater derived within these piezometers, sucralose (Splenda) analyses were included in this sample event. The influent wastewater (PNRS II STE – Tank 1) sucralose concentration was 27 μ g/L, which indicates the source wastewater contains sucralose. The sucralose concentrations for

the PZs were 5.10 μ g/L and below the method detection limit for TA5 and TA6, respectively. The sucralose concentration was below the method detection limit for all six background piezometers analyzed for sucralose which include: PZ-29, 30, 31, 32, 33 and 34, all located upgradient of the test areas. Two piezometers located within the drip system test area monitoring networks which previously had indicated a wastewater impact, TA3-PZ-11-I2 and TA4-PZ-11-L2, sucralose concentrations were 4.3 and 0.51 μ g/L and NOx-N concentrations were 14 and 10 mg/L, respectively. Therefore, it appears that the TA5 piezometer may be impacted by wastewater, but the source of this impact is unclear at this time. This will be investigated further in subsequent monitoring events.

5.2.3 Adaptive Monitoring

As discussed in Section 4.3.3.2, the shallow piezometer NOX results show that the test area plumes appear to be confined in a southwesterly direction from the center of each of the test areas. However, to better capture the eastern boundary of the plumes, it is recommended to install additional shallow piezometers prior to the next sample event.



Appendix A: S&GW Test Facility Sample Identification

Table A.1
S&GW Test Facility Sample Identification

	S&GW Test Facility Sample Identification												
ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes						
1	TA1-PAN-12-N	TA1	North				2' x 3.3' SST pan lysimeter						
2	TA1-OBS-N	TA1	North	1244816.74	582859.20	132.50	4"D observation port with slots						
3	TA1-OBS-S	TA1	South	1244807.75	582855.08	132.88	4"D observation port without slots						
4	TA1-SM-39-N	TA1	North	1244817.38	582860.13	130.27	2"D soil moisture tube with 6" casing						
5	TA1-SM-39-C	TA1	Center	1244812.80	582858.09	130.23	2"D soil moisture tube with 6" casing						
6	TA1-SM-39-S	TA1	South	1244803.79	582854.15	130.24	2"D soil moisture tube with 6" casing						
7	TA1-SM-BKG-S	TA1	South	1244778.23	582851.49	128.69	2"D soil moisture tube with 6" casing						
8	TA1-SM-BKG-E	TA1	East	1244814.73	582868.76	129.29	2"D soil moisture tube with 6" casing						
9	TA1-PZ-11-EF2	TA1	EF2	1244812.14	582857.35	133.59	1"D standpipe piezometer, 5' screen						
10	TA1-LY-24-C	TA1	Center	1244811.87	582857.75	133.69	2"D suction lysimeter, 9" cup						
11	TA1-LY-12-S	TA1	South	1244804.42	582853.25	132.60	2"D suction lysimeter, 9" cup						
12	TA1-LY-24-S	TA1	South	1244804.42	582854.46	134.14	2"D suction lysimeter, 9" cup						
13	TA1-LY-42-S	TA1	South	1244805.37	582853.79	132.66	2"D suction lysimeter, 9" cup						
14	TA1-T-6-C	TA1	Center	1244813.56	582858.66	132.34	tensiometer						
15	TA1-T-12-C	TA1	Center	1244813.75	582858.12	132.34	tensiometer						
16	TA1-T-24-C	TA1	Center	1244813.77	582857.64	132.33	tensiometer						
17	TA1-T-36-C	TA1	Center	1244813.80	582857.36	132.36	tensiometer						
18	TA1-T-42-C	TA1	Center	1244813.34	582857.00	132.88	tensiometer						
19	TA1-T-6-S	TA1	South	1244804.28	582853.77	132.32	tensiometer						
20	TA1-T-12-S	TA1	South	1244803.87	582852.93	132.35	tensiometer						
21	TA1-T-24-S	TA1	South	1244803.71	582852.77	132.36	tensiometer						
22	TA1-T-36-S	TA1	South	1244803.49	582852.89	132.38	tensiometer						
23	TA1-T-42-S	TA1	South	1244803.01	582853.26	132.80	tensiometer						
24	TA1-PZ-11-J4	TA1	J4	1244805.79	582849.87	133.57	1"D standpipe piezometer, 5' screen						
25	TA1-PZ-11-K4	TA1	K4	1244803.97	582849.03	133.58	1"D standpipe piezometer, 5' screen						
26	TA1-PZ-11-L2	TA1	L2	1244800.25	582851.77	133.57	1"D standpipe piezometer, 5' screen						
27	TA1-PZ-11-L3	TA1	L3	1244801.20	582849.94	133.57	1"D standpipe piezometer, 5' screen						
28	TA1-PZ-11-L4	TA1	L4	1244802.21	582848.15	133.57	1"D standpipe piezometer, 5' screen						
29	TA1-PZ-11-L5	TA1	L5	1244803.08	582846.26	133.57	1"D standpipe piezometer, 5' screen						

Table A.1

	S&GW Test Facility Sample Identification												
ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes						
30	TA1-PZ-09-N3	TA1	N3	1244798.01	582846.48	130.43	1"D standpipe piezometer, 5' screen						
31	TA1-PZ-16-N3	TA1	N3	1244798.02	582846.37	130.44	1"D standpipe piezometer, 2.5' screen						
32	TA1-PZ-09-O7	TA1	07	1244798.67	582839.96	130.08	1"D standpipe piezometer, 5' screen						
33	TA1-PZ-16-O7	TA1	07	1244799.11	582839.97	130.30	1"D standpipe piezometer, 2.5' screen						
34	TA1-PZ-09-M9	TA1	M9	1244804.22	582839.66	130.60	1"D standpipe piezometer, 5' screen						
35	TA1-PZ-16-M9	TA1	M9	1244804.35	582839.62	130.64	1"D standpipe piezometer, 2.5' screen						
36	TA1-PZ-09-I7	TA1	17	1244810.91	582845.19	130.27	1"D standpipe piezometer, 5' screen						
37	TA1-PZ-16-I7	TA1	17	1244810.78	582845.02	130.33	1"D standpipe piezometer, 2.5' screen						
38	TA1-PZ-09-RS16	TA1	RS16	1244792.19	582817.42	129.65	1"D standpipe piezometer, 5' screen						
39	TA1-PZ-16-RS16	TA1	RS16	1244792.14	582817.50	129.72	1"D standpipe piezometer, 2.5' screen						
40	TA1-PZ-09-RS18	TA1	RS18	1244792.34	582812.82	130.25	1"D standpipe piezometer, 5' screen						
41	TA1-PZ-16-RS18	TA1	RS18	1244792.43	582812.72	130.25	1"D standpipe piezometer, 2.5' screen						
42	TA2-PAN-12-N	TA2	North				2' x 3.3' SST pan lysimeter						
43	TA2-OBS-N	TA2	North	1244818.77	582722.04	131.67	4"D observation port with slots						
44	TA2-OBS-S	TA2	South	1244809.76	582718.30	132.27	4"D observation port without slots						
45	TA2-SM-39-C	TA2	Center	1244814.95	582721.02	129.80	2"D soil moisture tube with 6" casing						
46	TA2-PZ-10-EF2	TA2	EF2	1244814.23	582720.22	133.90	1"D standpipe piezometer, 5' screen						
47	TA2-LY-24-C	TA2	Center	1244814.09	582720.59	132.60	2"D suction lysimeter, 9" cup						
48	TA2-LY-12-S	TA2	South	1244806.60	582716.48	132.02	2"D suction lysimeter, 9" cup						
49	TA2-LY-24-S	TA2	South	1244806.64	582717.52	132.62	2"D suction lysimeter, 9" cup						
50	TA2-LY-42-S	TA2	South	1244807.39	582716.98	133.11	2"D suction lysimeter, 9" cup						
51	TA2-PZ-10-H5	TA2	H5	1244810.74	582712.43	133.76	1"D standpipe piezometer, 5' screen						
52	TA2-PZ-10-J5	TA2	J5	1244807.11	582710.94	133.73	1"D standpipe piezometer, 5' screen						
53	TA2-PZ-10-K5	TA2	K5	1244805.14	582710.05	133.74	1"D standpipe piezometer, 5' screen						
54	TA2-PZ-10-L2	TA2	L2	1244801.12	582714.87	133.74	1"D standpipe piezometer, 5' screen						
55	TA2-PZ-10-L3	TA2	L3	1244801.83	582713.03	133.73	1"D standpipe piezometer, 5' screen						
56	TA2-PZ-10-L4	TA2	L4	1244802.60	582711.25	133.52	1"D standpipe piezometer, 5' screen						
57	TA2-PZ-10-L5	TA2	L5	1244803.37	582709.39	133.73	1"D standpipe piezometer, 5' screen						
58	TA2-PZ-10-L6	TA2	L6	1244804.19	582707.50	133.72	1"D standpipe piezometer, 5' screen						
59	TA2-PZ-09-M4	TA2	M4	1244800.19	582709.27	129.51	1"D standpipe piezometer, 5' screen						

Table A.1
GW Test Facility Sample Identification

	S&GW Test Facility Sample Identification												
ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes						
60	TA2-PZ-16-M4	TA2	M4	1244800.27	582709.49	129.50	1"D standpipe piezometer, 2.5' screen						
61	TA2-PZ-09-N7	TA2	N7	1244801.15	582703.29	129.36	1"D standpipe piezometer, 5' screen						
62	TAO D7 46 N7	TA2	NIZ	1244801.21	E00702 42	129.37	1"D standpipe piezometer, 2.5'						
63	TA2-PZ-16-N7 TA2-PZ-09-I7	TA2	N7 I7	1244810.20	582703.43 582707.91	129.37	1"D standpipe piezometer, 5' screen						
03	1A2-F2-09-11	IAZ	17	1244010.20	302707.91	129.10	1"D standpipe piezometer, 3 screen						
64	TA2-PZ-16-I7	TA2	17	1244810.37	582707.66	129.52	screen						
65	TA2-PZ-09-L8	TA2	L8	1244806.27	582704.93	129.28	1"D standpipe piezometer, 5' screen						
66	TA2-PZ-16-L8	TA2	L8	1244806.33	582704.81	129.27	1"D standpipe piezometer, 2.5' screen						
67	TA2-PZ-09-TU19	TA2	TU19	1244790.44	582673.66	128.68	1"D standpipe piezometer, 5' screen						
68	TA2-PZ-16-TU19	TA2	TU19	1244790.49	582673.49	128.62	1"D standpipe piezometer, 2.5' screen						
69	TA2-PZ-09-TU21	TA2	TU21	1244790.32	582669.75	128.58	1"D standpipe piezometer, 5' screen						
70	TA2-PZ-16-TU21	TA2	TU21	1244790.60	582669.40	128.98	1"D standpipe piezometer, 2.5' screen						
71	TA3-PAN-12-N	TA3	North				2' x 3.3' SST pan lysimeter						
72	TA3-OBS-N	TA3	North	1244817.49	582814.57	131.20	4"D observation port with slots						
73	TA3-OBS-S	TA3	South	1244808.15	582811.07	131.11	4"D observation port without slots						
74	TA3-SM-39-N	TA3	North	1244817.96	582815.53	130.59	2"D soil moisture tube with 6" casing						
75	TA3-SM-39-C	TA3	Center	1244813.53	582813.63	130.60	2"D soil moisture tube with 6" casing						
76	TA3-SM-39-S	TA3	South	1244804.15	582809.89	130.57	2"D soil moisture tube with 6" casing						
77	TA3-SM-BKG-S	TA3	South	1244795.29	582807.19	129.32	2"D soil moisture tube with 6" casing						
78	TA3-SM-BKG-E	TA3	East				2"D soil moisture tube with 6" casing						
79	TA3-LY-24-C	TA3	Center	1244812.47	582813.21	133.45	2"D suction lysimeter, 9" cup						
80	TA3-LY-12-S	TA3	South	1244804.97	582809.16	132.24	2"D suction lysimeter, 9" cup						
81	TA3-LY-24-S	TA3	South	1244804.93	582810.17	132.90	2"D suction lysimeter, 9" cup						
82	TA3-LY-42-S	TA3	South	1244805.73	582809.79	132.98	2"D suction lysimeter, 9" cup						
83	TA3-T-6-C	TA3	Center	1244814.37	582813.76	132.19	tensiometer						
84	TA3-T-12-C	TA3	Center	1244814.50	582813.46	132.70	tensiometer						
85	TA3-T-24-C	TA3	Center	1244814.56	582813.15	132.23	tensiometer						
86	TA3-T-36-C	TA3	Center	1244814.31	582812.76	131.70	tensiometer						
87	TA3-T-42-C	TA3	Center	1244813.89	582812.49	132.20	tensiometer						
88	TA3-T-6-S	TA3	South	1244805.33	582809.71	132.19	tensiometer						
89	TA3-T-12-S	TA3	South	1244804.36	582809.00	132.69	tensiometer						

Table A.1
S&GW Test Facility Sample Identification

	S&GW Test Facility Sample Identification												
ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes						
90	TA3-T-24-S	TA3	South	1244803.69	582808.77	132.22	tensiometer						
91	TA3-T-36-S	TA3	South	1244803.59	582808.72	131.71	tensiometer						
92	TA3-T-42-S	TA3	South	1244803.27	582809.06	132.21	tensiometer						
93	TA3-PZ-11-EF2	TA3	EF2	1244812.64	582812.80	133.82	1"D standpipe piezometer, 5' screen						
94	TA3-PZ-11-I2	TA3	12	1244806.39	582810.24	133.54	1"D standpipe piezometer, 5' screen						
95	TA3-PZ-10-J5	TA3	J5	1244806.06	582803.49	133.49	1"D standpipe piezometer, 5' screen						
96	TA3-PZ-10-K5	TA3	K5	1244804.12	582802.85	133.49	1"D standpipe piezometer, 5' screen						
97	TA3-PZ-11-L2	TA3	L2	1244800.38	582808.17	133.51	1"D standpipe piezometer, 5' screen						
98	TA3-PZ-11-L3	TA3	L3	1244800.93	582806.21	133.51	1"D standpipe piezometer, 5' screen						
99	TA3-PZ-11-L4	TA3	L4	1244801.63	582804.23	133.50	1"D standpipe piezometer, 5' screen						
100	TA3-PZ-10-L5	TA3	L5	1244802.21	582802.23	133.49	1"D standpipe piezometer, 5' screen						
101	TA3-PZ-09-N3	TA3	N3	1244798.56	582803.29	129.88	1"D standpipe piezometer, 5' screen						
102	TA3-PZ-16-N3	TA3	N3	1244798.87	582803.18	129.89	1"D standpipe piezometer, 2.5' screen						
103	TA3-PZ-09-O7	TA3	07	1244798.85	582797.09	130.06	1"D standpipe piezometer, 5' screen						
104	TA3-PZ-16-O7	TA3	07	1244798.94	582796.81	130.26	1"D standpipe piezometer, 2.5' screen						
105	TA3-PZ-09-I7	TA3	17	1244809.85	582798.46	130.06	1"D standpipe piezometer, 5' screen						
106	TA3-PZ-16-I7	TA3	17	1244810.00	582798.53	130.06	1"D standpipe piezometer, 2.5' screen						
107	TA3-PZ-09-M9	TA3	M9	1244803.45	582796.14	130.18	1"D standpipe piezometer, 5' screen						
108	TA3-PZ-16-M9	TA3	M9	1244803.44	582796.02	130.12	1"D standpipe piezometer, 2.5' screen						
109	TA3-PZ-09-ST14	TA3	ST14	1244790.15	582780.80	129.88	1"D standpipe piezometer, 5' screen						
110	TA3-PZ-16-ST14	TA3	ST14	1244790.27	582780.68	129.81	1"D standpipe piezometer, 2.5' screen						
111	TA3-PZ-09-ST16	TA3	ST16	1244790.74	582776.81	129.54	1"D standpipe piezometer, 5' screen						
112	TA3-PZ-16-ST16	TA3	ST16	1244790.24	582776.71	130.00	1"D standpipe piezometer, 2.5' screen						
113	TA4-PAN-12-N	TA4	North				2' x 3.3' SST pan lysimeter						
114	TA4-OBS-N	TA4	North	1244819.86	582676.19	129.91	4"D observation port with slots						
115	TA4-OBS-S	TA4	South	1244810.58	582672.01	129.85	4"D observation port without slots						
116	TA4-SM-39-C	TA4	Center	1244815.85	582674.87	129.25	2"D soil moisture tube with 6" casing						
117	TA4-LY-24-C	TA4	Center	1244814.82	582674.46	132.10	2"D suction lysimeter, 9" cup						
118	TA4-LY-12-S	TA4	South	1244807.65	582670.18	130.89	2"D suction lysimeter, 9" cup						
119	TA4-LY-24-S	TA4	South	1244807.45	582671.38	132.75	2"D suction lysimeter, 9" cup						

Table A.1
W Test Facility Sample Identification

	S&GW Test Facility Sample Identification												
ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes						
120	TA4-LY-42-S	TA4	South	1244808.40	582670.62	132.57	2"D suction lysimeter, 9" cup						
121	TA4-PZ-11-EF2	TA4	EF2	1244815.06	582674.02	132.53	1"D standpipe piezometer, 5' screen						
122	TA4-PZ-10-H5	TA4	H5	1244812.91	582666.75	132.48	1"D standpipe piezometer, 5' screen						
123	TA4-PZ-10-J5	TA4	J5	1244809.21	582664.90	132.47	1"D standpipe piezometer, 5' screen						
124	TA4-PZ-10-K5	TA4	K5	1244807.45	582664.07	132.47	1"D standpipe piezometer, 5' screen						
125	TA4-PZ-11-L2	TA4	L2	1244803.06	582668.66	132.47	1"D standpipe piezometer, 5' screen						
126	TA4-PZ-11-L3	TA4	L3	1244804.02	582666.85	132.48	1"D standpipe piezometer, 5' screen						
127	TA4-PZ-11-L4	TA4	L4	1244804.79	582665.10	132.46	1"D standpipe piezometer, 5' screen						
128	TA4-PZ-11-L5	TA4	L5	1244805.65	582663.28	132.46	1"D standpipe piezometer, 5' screen						
129	TA4-PZ-11-L6	TA4	L6	1244806.56	582661.46	132.46	1"D standpipe piezometer, 5' screen						
130	TA4-PZ-09-M4	TA4	M4	1244802.46	582663.97	128.96	1"D standpipe piezometer, 5' screen						
131	TA4-PZ-16-M4	TA4	M4	1244802.29	582664.28	129.54	1"D standpipe piezometer, 5' screen						
132	TA4-PZ-09-N7	TA4	N7	1244807.44	582664.14	132.47	1"D standpipe piezometer, 5' screen						
133	TA4-PZ-16-N7	TA4	N7	1244803.91	582657.76	128.94	1"D standpipe piezometer, 5' screen						
134	TA4-PZ-09-I7	TA4	17	1244812.68	582663.21	128.83	1"D standpipe piezometer, 5' screen						
135	TA4-PZ-16-I7	TA4	17	1244812.80	582663.08	129.25	1"D standpipe piezometer, 5' screen						
136	TA4-PZ-09-L8	TA4	L8	1244807.67	582657.70	128.63	1"D standpipe piezometer, 5' screen						
137	TA4-PZ-16-L8	TA4	L8	1244807.84	582657.44	128.92	1"D standpipe piezometer, 5' screen						
138	TA4-PZ-09-TU14	TA4	TU14	1244793.10	582638.92	128.32	1"D standpipe piezometer, 5' screen						
139	TA4-PZ-16-TU14	TA4	TU14	1244792.96	582639.30	129.06	1"D standpipe piezometer, 5' screen						
140	TA4-PZ-09-TU16	TA4	TU16	1244794.18	582633.89	128.57	1"D standpipe piezometer, 5' screen						
141	TA4-PZ-16-TU16	TA4	TU16	1244793.99	582634.17	128.70	1"D standpipe piezometer, 5' screen						
142	TA5-OBS-I	TA5	Center	1244812.47	582770.36	132.52	4"D observation port, for infiltrator system						
143	TA5-OBS-N	TA5	North	1244817.64	582767.53	132.87	3"D observation port connected to collection pipe at bottom of sloped liner						
144	TA5-OBS-S	TA5	South	1244810.89	582764.74	132.91	3"D observation port connected to collection pipe at bottom of sloped liner						
145	TA5-PZ-I	TA5	South	1244802.11	582764.97	133.23	1"D standpipe piezometer, 5' screen south of infiltrator						
146	TA5-LY-C	TA5	Center	1244814.05	582766.03	133.15	2"D suction lysimeter, 9" cup at mix- ture and sand interface						
147	TA5-LINER-SP	TA5	North	1244827.69	582771.40	131.20	3"D sample port						
148	TA5-CLEANOUT	TA5	North	1244829.07	582772.03	131.60	4"D clean-out						

Table A.1
S&GW Test Facility Sample Identification

	S&GW Test Facility Sample Identification												
ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes						
149	TA5-Denite Tank	TA5	North	1244831.25	582772.19	129.90							
450	TA 0 OD 0 I	T40		404404454	E00000 04	101 10	4"D observation port, for infiltrator						
150	TA6-OBS-I	TA6	Center	1244814.51	582630.94	131.40	system 3"D observation port connected to						
151	TA6-OBS-N	TA6	North	1244819.57	582628.85	131.94	collection pipe at bottom of sloped liner						
152	TA6-OBS-S	TA6	South	1244812.49	582625.84	132.28	3"D observation port connected to collection pipe at bottom of sloped liner						
153	TA6-PZ-I	TA6	South	1244804.06	582626.81	133.43	1"D standpipe piezometer, 5' screen south of infiltrator						
154	TA6-LY-C	TA6	Center	1244815.99	582627.26	132.41	2"D suction lysimeter, 9" cup at mix- ture and sand interface						
155	TA6-LINER-SP	TA6	North	1244829.10	582632.72	130.89	3"D sample port						
156	TA6-CLEANOUT	TA6	North	1244830.50	582633.21	130.48	4"D clean-out						
157	TA6-Denite Tank	TA6	North	1244832.30	582633.85	128.98							
158	PZ01-BKG-09	BKG		1244957.50	582852.42	131.28	1.25"D standpipe piezometer, 5' screen						
159	LY01-BKG-24	BKG		1244957.82	582856.59	131.60	2"D suction lysimeter, 9" cup						
160	LY02-BKG-42	BKG		1244960.88	582857.29	132.03	2"D suction lysimeter, 9" cup						
161	BKG-SM-N	BKG		1244959.90	582854.52	130.62	2"D soil moisture tube with 6" casing						
162	PZ04-BKG-09	BKG		1244850.25	582615.24	129.45	1.25"D standpipe piezometer, 5' screen						
163	PZ24-BKG-26	BKG		1244854.09	582614.74	132.38	2"D standpipe piezometer, 5' screen						
164	PZ29-BKG-09	BKG		1244846.58	582755.86	130.93	³ / ₄ "D standpipe piezometer, 5' screen						
165	PZ30-BKG-16	BKG		1244845.66	582758.17	132.29	1"D standpipe piezometer, 5' screen						
166	PZ31-BKG-26	BKG		1244845.87	582757.80	128.99	1"D standpipe piezometer, 5' screen						
167	PZ32-BKG-09	BKG		1244843.82	582842.31	133.51	1"D standpipe piezometer, 5' screen						
168	PZ33-BKG-16	BKG		1244844.30	582845.33	132.84	1"D standpipe piezometer, 5' screen						
169	PZ34-BKG-26	BKG		1244843.73	582845.24	130.45	1"D standpipe piezometer, 5' screen						
170	PZ35-BKG-09	BKG		1244702.71	582872.85	129.18	1"D standpipe piezometer, 5' screen						
171	PZ36-BKG-16	BKG		1244702.63	582873.08	131.84	1"D standpipe piezometer, 5' screen						
172	PZ37-BKG-26	BKG		1244702.80	582872.92	128.31	1"D standpipe piezometer, 5' screen						
173	PZ38-BKG-09	BKG		1244582.29	582675.83	126.66	1"D standpipe piezometer, 5' screen						
174	PZ39-BKG-16	BKG		1244582.30	582675.42	129.60	1"D standpipe piezometer, 5' screen						
175	PZ40-BKG-26	BKG		1244582.13	582675.66	126.10	1"D standpipe piezometer, 5' screen						
176	STE Pump Tank			1244840.78	582676.05	129.10	STE effluent dose tank						

Table A.1 S&GW Test Facility Sample Identification

ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes
177	ATU Clarifier			1244841.16	582671.78	129.12	
	ATU Eff Pump	U Eff Pump					
178	Tank			1244840.54	582681.28	129.16	Nitrified effluent dose tank
	GCREC Pump						
179	Station						GCREC mound lift station
	PNRS II STE-						
180	180 Tank 1						PNRS II Tank 1

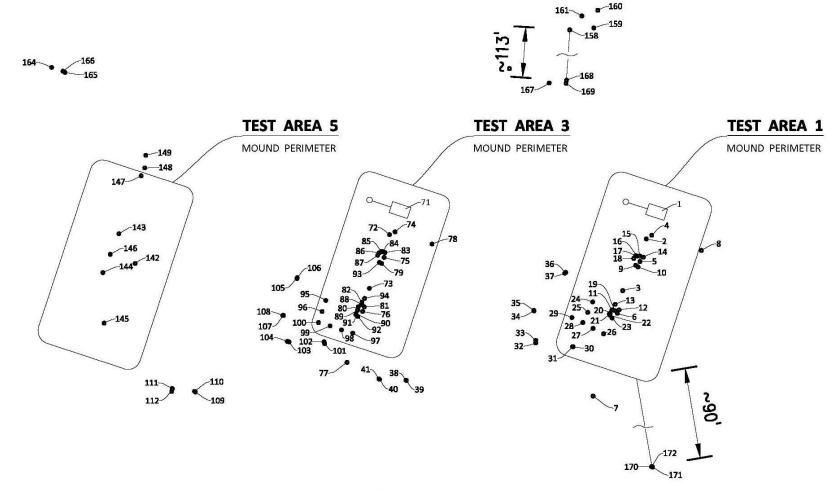


Figure A.1 S&GW Test Facility System Schematic of TA1, TA3, and TA5 (STE System) ¹Location identification corresponds to Table A.1 ID #



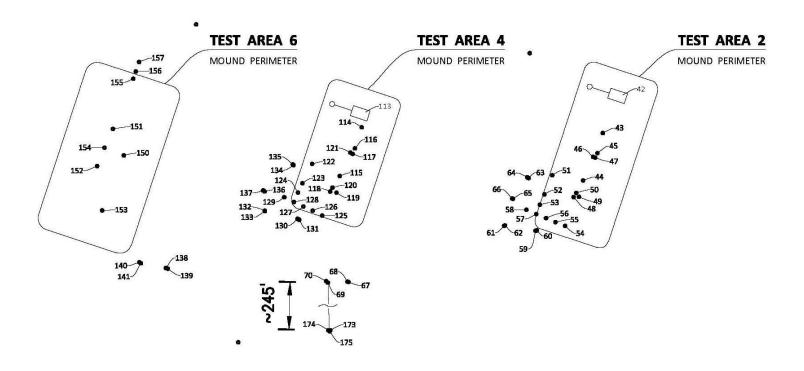


Figure A.2 S&GW Test Facility System Schematic of TA2, TA4, and TA6 (ATU Effluent System) ¹Location identification corresponds to Table A.1 ID #



Appendix B: GCREC Weather Station Data

Table B.1
Daily Recorded Meteorological Data

Period	60cm Temp avg (°F)	60cm Temp min (°F)	60cm Temp max (°F)	Tsoil avg – 10cm (°F)	Tsoil Min (avg) – 10cm (°F)	Tsoil Max (avg) – 10cm (°F)	2m DewPt avg (°F)	Relative Humidity avg 2m (%)	2m Rain total (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	ET avg (in)
21-Jun-12	77.40	72.23	88.74	80.44	79.32	81.79	74.29	89	0.13	0.13	7.61	0.60	20.77	0.14
22-Jun-12	77.25	72.79	87.55	80.55	79.47	81.72	74.76	91	0.40	0.15	6.26	0.20	20.27	0.13
23-Jun-12	75.58	72.01	79.57	79.47	79.02	80.02	75.02	96	0.25	0.06	7.57	2.57	18.70	0.07
24-Jun-12	75.09	72.28	78.08	77.48	76.89	79.23	75.08	97	4.37	0.56	16.64	4.93	39.20	0.04
25-Jun-12	76.85	74.23	83.03	77.01	75.94	78.01	75.47	93	3.55	0.66	17.90	5.07	40.57	0.10
26-Jun-12	78.30	75.42	81.82	77.81	77.07	78.82	76.14	90	0.33	0.06	16.66	4.30	37.40	0.11
27-Jun-12	78.37	72.66	86.56	79.00	77.25	81.36	73.94	86	0.04	0.02	7.56	1.13	26.20	0.17
28-Jun-12	78.96	67.69	90.86	80.19	77.81	82.87	68.40	71	0.00	0.00	4.07	0.00	12.00	0.20
29-Jun-12	78.17	64.72	90.05	80.81	78.01	83.73	70.11	77	0.00	0.00	4.27	0.07	14.33	0.20
30-Jun-12	78.25	66.76	88.61	81.34	78.84	84.00	71.44	80	0.00	0.00	5.03	0.00	17.63	0.20
1-Jul-12	79.59	67.26	90.64	81.78	79.16	84.43	73.27	81	0.00	0.00	4.60	0.13	14.90	0.20
2-Jul-12	80.83	70.68	92.14	82.65	80.29	85.14	73.79	80	0.00	0.00	4.61	0.00	15.87	0.21
3-Jul-12	81.28	68.70	92.62	83.19	80.91	85.53	72.57	76	0.00	0.00	3.73	0.00	15.57	0.19
4-Jul-12	79.72	70.56	94.42	83.43	81.57	85.50	72.70	80	0.00	0.00	3.76	0.00	22.33	0.17
5-Jul-12	79.34	68.90	93.31	83.00	81.07	84.87	72.54	80	0.16	0.11	3.84	0.00	18.13	0.17
6-Jul-12	80.40	70.74	94.06	83.21	80.98	85.64	72.25	78	0.00	0.00	4.36	0.07	21.53	0.21
7-Jul-12	82.12	70.61	93.85	83.96	81.70	86.27	72.71	75	0.00	0.00	4.61	0.07	18.67	0.21
8-Jul-12	82.05	70.03	94.95	84.47	82.35	86.67	72.99	75	0.00	0.00	4.57	0.13	18.13	0.20
9-Jul-12	82.07	71.71	93.40	84.67	83.01	86.45	74.65	79	0.00	0.00	4.15	0.00	17.77	0.19
10-Jul-12	78.07	70.12	92.61	84.43	82.96	86.23	73.08	85	0.21	0.12	4.18	0.13	21.07	0.15
11-Jul-12	75.49	69.71	88.54	82.98	81.75	84.40	73.06	92	0.07	0.02	4.79	0.10	20.17	N/A
12-Jul-12	78.22	69.89	88.12	82.24	80.80	83.64	73.59	86	0.00	0.00	4.25	0.00	19.00	0.15
13-Jul-12	78.43	72.12	89.44	82.62	81.25	84.15	74.26	87	0.00	0.00	6.38	0.07	24.53	0.15
14-Jul-12	79.48	71.11	90.01	82.58	81.01	83.93	73.88	83	0.00	0.00	7.73	1.27	24.73	0.17

Table B.1 (continued) Daily Recorded Meteorological Data

Period	60cm Temp avg (°F)	60cm Temp min (°F)	60cm Temp max (°F)	Tsoil avg – 10cm (°F)	Tsoil Min (avg) – 10cm (°F)	Tsoil Max (avg) – 10cm (°F)	2m DewPt avg (°F)	Relative Humidity avg 2m (%)	2m Rain total (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	ET avg (in)
15-Jul-12	76.76	70.59	90.52	82.30	81.21	84.11	73.05	88	0.98	0.24	5.07	0.10	49.50	0.14
16-Jul-12	76.68	69.82	87.04	81.48	79.97	82.87	74.01	91	0.03	0.01	4.79	0.27	18.90	N/A
17-Jul-12	76.53	71.73	84.72	81.66	80.42	83.37	74.12	92	0.59	0.39	5.33	0.17	17.87	0.14
18-Jul-12	77.42	72.59	85.68	81.51	80.17	82.98	74.81	91	0.06	0.04	3.88	0.00	20.53	0.14
19-Jul-12	81.21	72.52	92.19	82.56	80.29	85.06	75.70	83	0.00	0.00	4.75	0.00	40.20	0.20
20-Jul-12	82.41	71.55	94.46	83.50	81.07	86.05	74.86	80	0.00	0.00	4.15	0.03	12.53	0.21
21-Jul-12	81.16	72.61	94.42	84.39	82.47	86.72	74.96	82	0.05	0.03	6.38	0.53	26.80	0.20
22-Jul-12	77.55	71.10	90.84	83.55	82.42	85.53	74.58	90	0.43	0.18	7.23	0.07	36.90	0.15
23-Jul-12	75.74	70.54	87.24	82.02	80.96	83.34	74.13	94	0.03	0.01	6.10	0.30	17.13	0.11
24-Jul-12	79.80	71.06	89.74	82.39	80.49	84.58	75.28	86	0.00	0.00	5.11	0.13	17.80	0.18
25-Jul-12	80.94	73.06	91.04	83.12	81.23	85.03	76.34	85	0.00	0.00	5.73	0.33	19.13	0.18
26-Jul-12	81.59	71.31	91.78	83.63	81.36	85.98	75.52	82	0.00	0.00	5.41	0.13	18.27	0.20
27-Jul-12	81.53	69.98	92.12	84.25	81.95	86.61	74.75	81	0.00	0.00	4.04	0.10	17.30	0.20
28-Jul-12	81.08	70.16	92.28	84.70	82.60	86.81	75.39	83	0.00	0.00	3.78	0.00	16.57	0.19
29-Jul-12	81.30	70.39	92.59	84.92	82.89	86.95	75.04	81	0.00	0.00	4.94	0.13	17.33	0.18
30-Jul-12	80.26	70.65	91.72	84.94	82.87	87.13	74.26	82	0.00	0.00	5.74	0.17	21.20	0.19
31-Jul-12	79.75	70.00	92.62	84.95	83.03	86.81	73.18	81	0.00	0.00	5.30	0.00	21.23	0.17
1-Aug-12	78.53	70.88	88.93	83.99	82.85	84.92	75.33	88	0.10	0.09	4.02	0.00	23.23	0.12
2-Aug-12	80.99	70.65	91.74	83.67	81.73	85.57	74.60	81	0.00	0.00	4.46	0.00	14.70	0.18
3-Aug-12	77.94	69.71	95.59	83.40	82.08	85.82	73.13	86	1.01	0.36	4.42	0.03	32.70	0.15
4-Aug-12	80.39	69.35	92.41	82.83	80.64	85.19	73.57	81	0.00	0.00	4.79	0.40	15.20	0.19
5-Aug-12	79.28	72.63	94.42	83.78	81.88	86.23	75.05	87	0.12	0.04	5.90	0.13	18.87	0.17

Table B.1 (continued) Daily Recorded Meteorological Data

Period	60cm Temp avg (°F)	60cm Temp min (°F)	60cm Temp max (°F)	Tsoil avg – 10cm (°F)	Tsoil Min (avg) – 10cm (°F)	Tsoil Max (avg) – 10cm (°F)	2m DewPt avg (°F)	Relative Humidity avg 2m (%)	2m Rain total (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	ET avg (in)
6-Aug-12	78.20	72.75	91.36	83.65	82.15	85.91	75.58	92	0.22	0.03	5.68	0.27	28.87	0.15
7-Aug-12	79.95	71.60	90.05	83.04	81.46	84.85	75.57	86	0.00	0.00	4.25	0.03	15.40	0.13
8-Aug-12	81.83	73.18	93.51	84.00	82.06	86.50	75.60	82	0.13	0.10	4.37	0.13	26.47	0.18
9-Aug-12	82.01	70.45	94.62	84.59	82.20	87.21	74.07	78	0.00	0.00	4.96	0.20	12.47	0.20
10-Aug-12	79.11	71.98	91.78	84.53	82.94	86.02	74.32	85	0.00	0.00	4.49	0.07	25.30	0.14
11-Aug-12	80.07	71.42	91.56	84.27	82.45	86.00	74.83	85	0.00	0.00	4.61	0.13	16.73	0.16
12-Aug-12	77.33	70.92	90.37	84.06	82.72	85.39	74.39	91	0.03	0.01	4.27	0.07	23.17	0.13
13-Aug-12	79.55	72.50	90.16	83.42	81.97	84.83	75.89	88	0.00	0.00	3.52	0.00	12.10	0.14
14-Aug-12	78.23	70.97	92.53	82.98	81.73	84.85	74.51	88	0.72	0.36	4.28	0.00	23.37	0.14
15-Aug-12	80.58	69.01	92.86	82.76	80.64	85.01	74.91	84	0.00	0.00	3.32	0.00	11.37	0.16
16-Aug-12	81.40	72.45	93.83	83.85	81.93	86.16	76.44	85	0.04	0.02	3.75	0.00	13.87	0.17
17-Aug-12	79.67	73.26	88.50	83.54	82.35	84.38	76.26	88	0.00	0.00	3.67	0.13	16.07	0.12
18-Aug-12	75.37	72.36	80.06	81.85	81.19	83.17	74.93	96	0.39	0.05	3.88	0.13	17.63	0.07
19-Aug-12	80.49	72.10	90.86	82.23	80.19	84.67	75.93	86	0.13	0.09	7.20	0.13	23.93	0.18
20-Aug-12	81.21	72.48	92.48	83.33	81.32	85.53	75.07	82	0.02	0.01	7.38	0.10	22.60	0.19
21-Aug-12	78.29	70.56	93.13	83.17	80.78	85.46	73.78	87	1.66	0.43	8.28	0.27	26.50	0.16
22-Aug-12	74.11	70.50	89.01	79.00	75.25	82.42	72.60	94	3.89	0.68	5.75	0.40	32.27	0.10
23-Aug-12	78.81	68.16	90.91	79.06	76.84	81.64	72.80	83	0.00	0.00	3.66	0.00	15.50	0.16
24-Aug-12	79.61	70.03	91.27	80.80	78.85	82.99	73.64	83	0.00	0.00	6.28	0.93	19.73	0.18
25-Aug-12	78.88	71.24	89.20	81.43	80.02	82.94	72.15	80	0.00	0.00	9.68	2.97	22.80	0.16
26-Aug-12	76.86	73.02	82.90	80.76	79.86	81.63	75.23	93	0.74	0.12	12.83	3.83	39.97	0.08
27-Aug-12	77.85	73.80	83.75	79.45	78.24	80.62	77.04	95	2.37	0.29	14.50	3.93	32.57	0.09

o:\44237-001\\\Wpdocs\Report\Draft





Appendix C: S&GW Test Facility Tensiometer Data

Table C.1 S&GW Test Facility Test Area 3 Daily Average Tensiometer Data (mbar)

			TA3-Center			TA3-South					
Depth below IS:	6"	12"	24"	36"	42"	6"	12"	24"	36"	42"	
Date	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	
06/21/12	NEG	151.648	182.270	199.361	-62.350	109.632	147.257	247.431	212.299	91.828	
06/22/12	NEG	151.055	172.063	190.934	-62.350	109.394	141.441	237.936	203.872	86.131	
06/23/12	NEG	154.259	174.199	190.934	-62.350	113.193	145.120	233.663	199.005	84.232	
06/24/12	NEG	149.630	164.704	183.813	-62.350	109.038	137.999	247.906	193.190	98.831	
06/25/12	NEG	132.539	139.067	161.499	-62.350	96.339	122.213	227.728	164.229	114.973	
06/26/12	NEG	140.847	141.678	151.055	-62.943	100.849	130.403	221.319	100.849	221.319	
06/27/12	NEG	205.296	202.329	195.563	-63.656	155.921	191.409	227.372	166.722	NAN	
06/28/12	NEG	156.989	155.802	149.630	-63.062	108.326	144.052	181.558	125.062	-155.403	
06/29/12	NEG	163.873	171.469	165.772	-62.706	115.922	154.141	205.415	157.345	-117.066	
06/30/12	NEG	161.855	178.235	173.606	-62.350	115.922	153.784	208.501	168.739	-89.649	
07/01/12	NEG	159.719	180.846	180.371	-62.350	114.498	152.716	207.195	174.437	-93.328	
07/02/12	NEG	159.719	184.169	186.662	-62.350	115.210	153.191	217.402	180.252	-96.414	
07/03/12	NEG	159.838	185.949	189.985	-62.469	115.210	152.954	216.690	183.101	-103.654	
07/04/12	NEG	159.838	188.205	193.071	-62.113	116.278	155.090	223.930	189.629	-83.833	
07/05/12	NEG	158.295	188.917	195.207	-62.231	114.973	153.428	222.625	192.596	NAN	
07/06/12	NEG	156.396	187.255	196.869	-62.231	114.379	150.461	207.788	195.089	-74.100	
07/07/12	NEG	158.295	187.611	198.649	-62.350	115.922	150.817	206.839	197.106	-74.812	
07/08/12	NEG	173.368	193.902	201.735	-62.113	128.741	162.093	209.213	200.430	-80.510	
07/09/12	NEG	209.213	206.958	206.483	-62.231	156.396	240.072	217.402	203.634	-81.459	
07/10/12	NEG	207.788	216.690	209.925	-62.350	143.340	359.593	223.337	206.483	-81.459	
07/11/12	NEG	141.203	194.495	208.738	-62.231	107.139	151.173	226.779	207.195	-77.305	
07/12/12	NEG	143.102	163.873	198.056	-62.350	104.409	135.031	200.786	198.175	-66.267	
07/13/12	NEG	149.986	170.164	200.904	-62.350	110.581	143.102	185.593	208.145	-68.759	
07/14/12	NEG	146.663	169.808	200.667	-62.350	108.564	141.915	184.288	202.922	-67.335	
07/15/12	NEG	-84.901	55.034	84.113	-65.792	-10.839	30.466	70.820	86.725	-69.827	
07/16/12	NAN	-631.825	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	
07/17/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	
07/18/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	
07/19/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	
07/20/12	166.959	139.660	140.135	141.678	141.678	146.070	144.171	145.595	142.153	147.969	
07/21/12	110.225	90.167	90.285	89.692	91.591	93.015	92.540	92.540	90.048	95.033	
07/22/12	126.367	111.293	109.394	109.157	110.937	112.006	112.718	112.362	110.225	114.379	
07/23/12	145.476	129.453	127.079	127.317	129.334	130.046	131.827	130.403	129.690	133.132	
07/24/12	NAN	NAN	NAN	NAN	NAN	133.370	NAN	NAN	NAN	136.456	
07/25/12	222.981	198.531	198.768	199.955	201.142	201.379	202.685	201.260	202.210	202.685	
07/26/12	231.764	215.266	214.435	215.029	217.046	216.809	220.251	217.996	218.352	218.827	
07/27/12	241.852	227.016	226.898	227.847	228.322	230.696	232.595	230.577	229.509	231.883	
07/28/12	231.052	218.233	218.352	218.589	219.539	221.082	223.099	221.438	220.488	222.625	
07/29/12	104.291	97.051	96.576	96.339	97.051	96.813	98.238	98.000	97.407	97.882	
07/30/12	65.004	60.969	60.019	59.307	59.545	58.358	59.545	59.189	59.307	58.595	
07/31/12	57.290	53.135	53.135	51.474	52.423	50.406	52.067	51.236	51.474	50.643	

Table C.1 (continued) S&GW Test Facility Test Area 3 Daily Average Tensiometer Data (mbar)

			TA3-Center			TA3-South					
Depth below IS:	6"	12"	24"	36"	42"	6"	12"	24"	36"	42"	
Date	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	
08/01/12	52.423	49.693	48.388	48.269	47.201	47.082	46.489	47.320	46.251	46.489	
08/02/12	100.018	96.576	95.152	94.083	93.965	92.303	93.371	92.659	93.015	91.591	
08/03/12	76.517	72.007	70.583	70.939	70.701	69.989	71.176	71.414	71.058	70.345	
08/04/12	70.345	67.022	66.310	65.242	65.004	64.055	64.292	64.411	63.699	63.580	
08/05/12	61.681	57.290	56.340	55.865	55.747	55.034	55.628	56.103	55.390	55.272	
08/06/12	62.156	60.019	58.358	58.239	57.171	56.696	56.815	56.815	56.577	55.628	
08/07/12	91.947	87.437	86.013	85.182	85.656	83.520	85.775	84.826	85.656	83.876	
08/08/12	75.568	71.888	68.921	70.108	68.921	68.446	69.515	70.108	69.989	68.446	
08/09/12	41.860	40.554	38.774	38.655	37.824	36.994	37.468	36.994	37.468	35.925	
08/10/12	27.973	24.650	25.125	23.582	23.819	22.513	22.988	22.869	22.276	22.395	
08/11/12	25.006	23.938	22.513	22.988	21.683	21.683	21.089	21.683	20.970	20.614	
08/12/12	31.890	29.279	28.685	27.973	27.617	26.668	27.024	27.024	26.668	26.193	
08/13/12	41.504	39.486	38.537	38.062	37.468	36.519	36.875	36.637	36.400	35.569	
08/14/12	56.221	53.254	52.067	51.474	51.118	49.812	50.762	50.762	50.643	49.575	
08/15/12	53.491	51.118	49.931	49.337	49.100	47.676	48.625	48.150	48.269	46.845	
08/16/12	1.505	-0.156	-0.631	-1.106	-1.106	-1.937	-1.343	-1.581	-1.581	-2.174	
08/17/12	51.711	49.100	48.150	47.438	47.320	46.133	46.963	46.607	46.607	45.658	
08/18/12	76.280	72.363	72.363	70.820	71.532	69.515	71.058	70.227	70.345	69.515	
08/19/12	171.469	165.891	163.636	162.686	162.330	160.550	162.211	162.330	162.330	161.143	
08/20/12	61.562	55.865	55.272	55.628	56.103	55.272	57.052	56.933	56.815	55.865	
08/21/12	56.459	53.373	52.423	51.830	51.711	50.762	51.474	51.355	51.355	50.999	
08/22/12	67.616	65.004	64.055	62.749	63.224	61.444	63.105	61.444	62.631	60.969	
08/23/12	125.655	121.026	118.771	118.652	118.415	117.584	118.771	118.296	118.890	117.703	
08/24/12	53.966	47.794	47.913	46.963	47.913	47.201	48.269	48.388	48.032	48.506	
08/25/12	36.994	34.976	33.789	33.314	33.077	32.246	32.721	32.127	32.365	31.652	
08/26/12	47.557	45.302	43.640	43.521	42.572	42.572	42.216	42.572	42.097	41.979	
08/27/12	119.483	114.498	113.430	111.412	112.124	109.869	111.650	110.344	111.056	109.988	

NAN (not-a-number) indicates an exceptional occurrence in datalogger function or processing occurred (an invalid measurement).

NR indicates no reading occurred.

EM indicates an equipment malfunction occurred. We are in the process of troubleshooting the problem.

NEG indicates negative soil tensiometer readings were recorded which is being investigated

Appendix C

Table C.2 S&GW Test Facility Test Area 1 Daily Average Tensiometer Data (mbar)

	TA1-Center							TA1-South		
Depth below IS:	6"	12"	24"	36"	42"	6"	12"	24"	36"	42"
Date	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar
06/21/12	NAN	156.396	48.981	241.022	263.810	132.895	NEG	NEG	NEG	NEG
06/22/12	NAN	149.986	50.643	238.410	262.742	130.046	NEG	NEG	NEG	NEG
06/23/12	NAN	147.494	51.236	234.968	260.012	130.996	NEG	NEG	NEG	NEG
06/24/12	NAN	143.933	49.931	230.340	256.926	127.317	NEG	NEG	NEG	NEG
06/25/12	NAN	127.198	47.676	215.741	244.701	116.635	NEG	NEG	NEG	NEG
06/26/12	NAN	127.673	45.539	182.389	198.293	119.483	NEG	NEG	NEG	NEG
06/27/12	NAN	189.866	93.727	211.468	222.387	176.454	NEG	NEG	NEG	NEG
06/28/12	NAN	143.696	44.946	167.315	176.810	127.317	NEG	NEG	NEG	NEG
06/29/12	NAN	155.446	44.115	181.083	193.664	135.269	NEG	NEG	NEG	NEG
06/30/12	NAN	158.057	44.234	189.391	202.210	134.675	NEG	NEG	NEG	NEG
07/01/12	NAN	157.227	41.741	195.801	208.738	132.776	NEG	NEG	NEG	NEG
07/02/12	NAN	157.939	22.988	200.904	214.672	133.489	NEG	NEG	NEG	NEG
07/03/12	NAN	156.633	29.160	204.703	218.352	134.913	NEG	NEG	NEG	NEG
07/04/12	NAN	157.583	36.875	210.281	222.269	135.150	NEG	NEG	NEG	NEG
07/05/12	NAN	157.939	40.198	213.604	225.117	134.201	NEG	NEG	NEG	NEG
07/06/12	NAN	156.633	42.928	215.503	227.610	131.946	NEG	NEG	NEG	NEG
07/07/12	NAN	157.227	38.299	216.097	230.221	134.082	NEG	NEG	NEG	NEG
07/08/12	NAN	161.974	33.670	221.438	233.188	142.984	NEG	NEG	NEG	NEG
07/09/12	-106.740	173.368	34.264	222.269	235.206	151.648	NEG	NEG	NEG	NEG
07/10/12	148.206	180.965	32.365	225.473	237.461	154.141	NEG	NEG	NEG	NEG
07/11/12	NAN	178.353	30.703	228.797	239.716	127.435	NEG	NEG	NEG	NEG
07/12/12	NAN	157.464	31.296	228.084	240.072	122.213	NEG	NEG	NEG	NEG
07/13/12	124.587	142.628	34.145	230.577	246.837	126.842	NEG	NEG	NEG	NEG
07/14/12	122.450	138.948	32.365	231.526	246.007	125.062	NEG	NEG	NEG	NEG
07/15/12	6.015	27.142	-86.325	119.246	132.183	7.914	NEG	NEG	NEG	NEG
07/16/12	NAN	NAN	NAN	NAN	NAN	NAN	NEG	NEG	NEG	NEG
07/17/12	NAN	NAN	NAN	NAN	NAN	NAN	NEG	NEG	NEG	NEG
07/18/12	NAN	NAN	NAN	NAN	NAN	NAN	NEG	NEG	NEG	NEG
07/19/12	NAN	NAN	NAN	NAN	NAN	NAN	NEG	NEG	NEG	NEG
07/20/12	148.681	146.782	147.969	147.019	147.494	146.900	NEG	NEG	NEG	NEG
07/21/12	95.626	86.250	98.594	94.558	93.727	93.727	NEG	NEG	NEG	NEG
07/22/12	116.397	102.629	119.602	116.041	114.973	114.498	NEG	NEG	NEG	NEG
07/23/12	135.862	121.145	139.423	135.506	133.845	133.370	NEG	NEG	NEG	NEG
07/24/12	138.711	121.857	145.832	137.168	135.862	135.031	NEG	NEG	NEG	NEG
07/25/12	205.415	197.225	208.382	203.278	202.566	202.922	NEG	NEG	NEG	NEG
07/26/12	222.862	214.316	224.049	221.319	220.370	220.607	NEG	NEG	NEG	NEG
07/27/12	235.087	227.135	236.630	234.019	233.663	232.951	NEG	NEG	NEG	NEG
07/28/12	225.355	218.352	226.304	224.642	224.168	223.930	NEG	NEG	NEG	NEG
07/29/12	100.018	94.083	100.255	99.068	98.950	98.594	NEG	NEG	NEG	NEG
07/30/12	60.257	56.459	59.545	59.189	59.307	59.189	NEG	NEG	NEG	NEG
07/31/12	51.474	49.693	50.406	51.236	50.406	51.355	NEG	NEG	NEG	NEG

October 2012

Table C.2 (continued) S&GW Test Facility Test Area 1 Daily Average Tensiometer Data (mbar)

	TA1-Center					TA1-South					
Depth below IS:	6"	12"	24"	36"	42"	6"	12"	24"	36"	42"	
Date	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	
08/01/12	46.370	45.777	45.777	45.777	46.133	45.539	NEG	NEG	NEG	NEG	
08/02/12	92.659	90.760	91.591	91.472	91.591	91.710	NEG	NEG	NEG	NEG	
08/03/12	72.482	67.497	72.363	71.176	71.532	70.701	NEG	NEG	NEG	NEG	
08/04/12	63.580	63.105	62.749	63.343	62.987	63.105	NEG	NEG	NEG	NEG	
08/05/12	56.221	53.610	55.628	55.747	55.628	55.390	NEG	NEG	NEG	NEG	
08/06/12	56.459	55.153	55.747	55.034	55.747	55.153	NEG	NEG	NEG	NEG	
08/07/12	86.250	83.045	84.707	84.826	84.826	85.063	NEG	NEG	NEG	NEG	
08/08/12	71.414	67.022	70.345	68.921	70.701	69.040	NEG	NEG	NEG	NEG	
08/09/12	37.231	35.569	36.637	35.688	36.519	35.807	NEG	NEG	NEG	NEG	
08/10/12	21.445	22.395	20.970	22.276	20.970	21.920	NEG	NEG	NEG	NEG	
08/11/12	20.614	20.021	20.377	19.546	20.258	19.309	NEG	NEG	NEG	NEG	
08/12/12	26.074	25.955	25.599	25.837	25.599	25.718	NEG	NEG	NEG	NEG	
08/13/12	35.688	35.094	35.094	34.857	34.857	34.738	NEG	NEG	NEG	NEG	
08/14/12	50.287	49.219	49.693	49.693	49.931	49.812	NEG	NEG	NEG	NEG	
08/15/12	47.557	46.133	46.963	46.726	46.845	46.726	NEG	NEG	NEG	NEG	
08/16/12	-2.055	-2.412	-2.412	-2.412	-2.530	-2.412	NEG	NEG	NEG	NEG	
08/17/12	46.133	44.946	45.539	45.539	45.421	45.539	NEG	NEG	NEG	NEG	
08/18/12	69.752	69.040	69.040	69.871	68.921	69.752	NEG	NEG	NEG	NEG	
08/19/12	162.449	160.669	161.618	161.974	162.449	162.568	NEG	NEG	NEG	NEG	
08/20/12	57.290	53.610	57.527	56.815	56.696	56.340	NEG	NEG	NEG	NEG	
08/21/12	51.355	50.524	50.880	51.118	50.999	51.118	NEG	NEG	NEG	NEG	
08/22/12	62.393	60.850	61.562	61.444	61.325	61.800	NEG	NEG	NEG	NEG	
08/23/12	119.720	116.397	119.483	118.534	119.364	118.771	NEG	NEG	NEG	NEG	
08/24/12	48.744	47.320	48.625	49.456	48.506	49.100	NEG	NEG	NEG	NEG	
08/25/12	32.365	31.296	31.890	31.652	31.652	31.652	NEG	NEG	NEG	NEG	
08/26/12	42.453	41.385	41.979	41.504	42.216	41.504	NEG	NEG	NEG	NEG	
08/27/12	111.056	109.394	109.988	110.463	109.988	110.937	NEG	NEG	NEG	NEG	

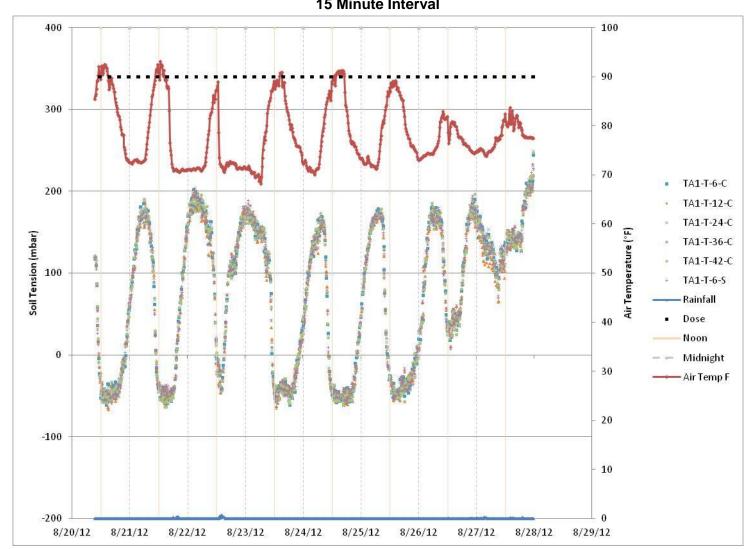
NAN (not-a-number) indicates an exceptional occurrence in datalogger function or processing occurred (an invalid measurement).

NR indicates no reading occurred.

EM indicates an equipment malfunction occurred. We are in the process of troubleshooting the problem.

NEG indicates negative soil tensiometer readings were recorded which is being investigated

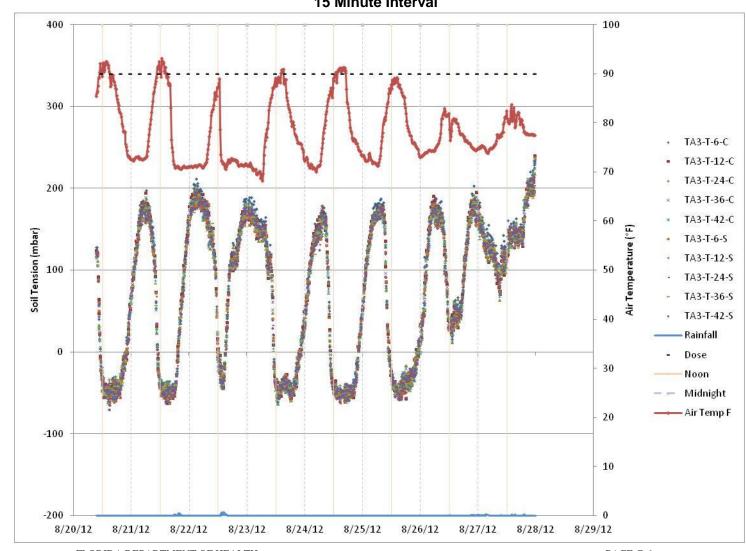
Figure C.1
TA1 S&GW Test Facility
Soil Tension (mbar), Rainfall (inches), Temperature (°F) and Dose
15 Minute Interval



FLORIDA ONSITE SEWAGE NITROGEN REDUCTION STRATEGIES STUDY S&GW TEST FACILITY DATA SUMMARY REPORT NO. 2

PAGE C-5 HAZEN AND SAWYER, P.C.

Figure C.2
TA3 S&GW Test Facility
Soil Tension (mbar), Rainfall (inches), Temperature (°F) and Dose
15 Minute Interval



FLORIDA DEPARTMENT OF HEALTH S&GW TEST FACILITY DATA SUMMARY REPORT NO. 2

PAGE C-6 HAZEN AND SAWYER, P.C.





Appendix D: S&GW Test Facility Soil Moisture Data

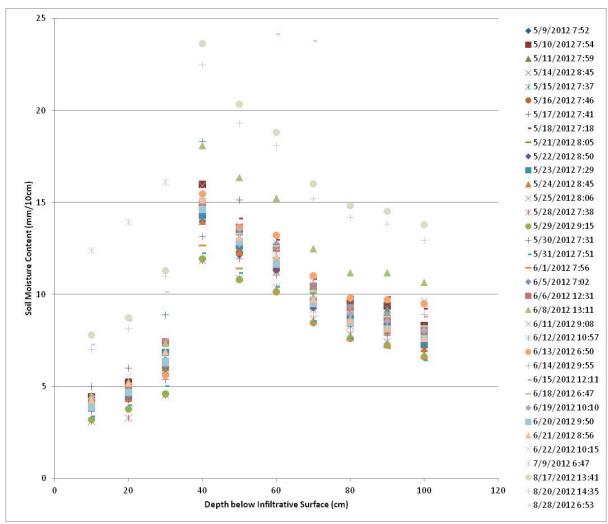


Figure D.1
Soil Moisture Test Area 1 North

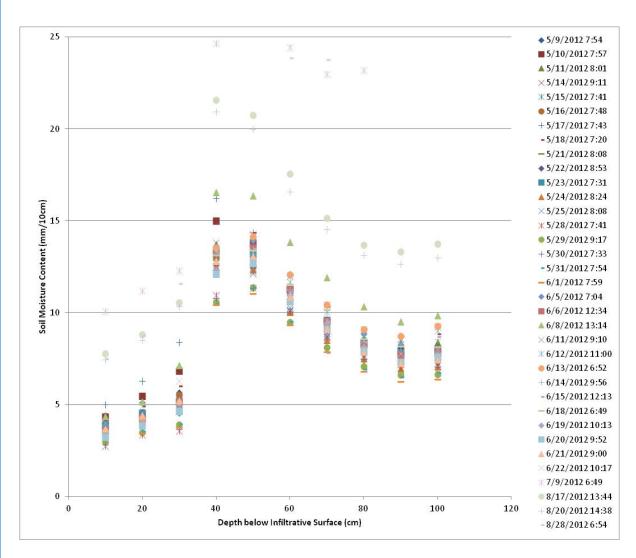


Figure D.2
Soil Moisture Test Area 1 Center

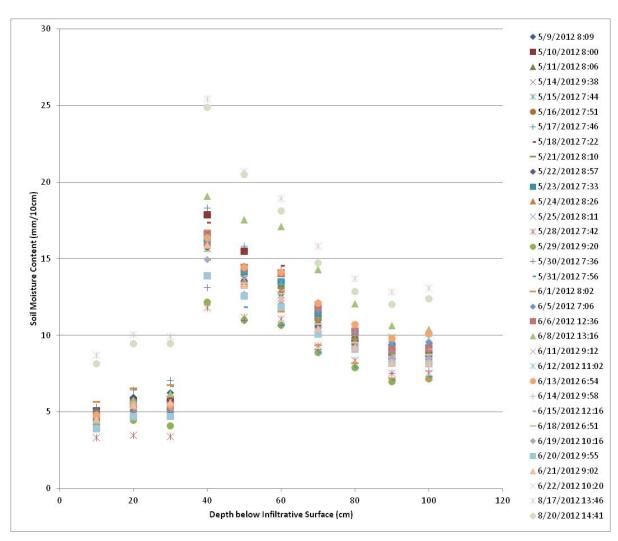


Figure D.3 Soil Moisture Test Area 1 South

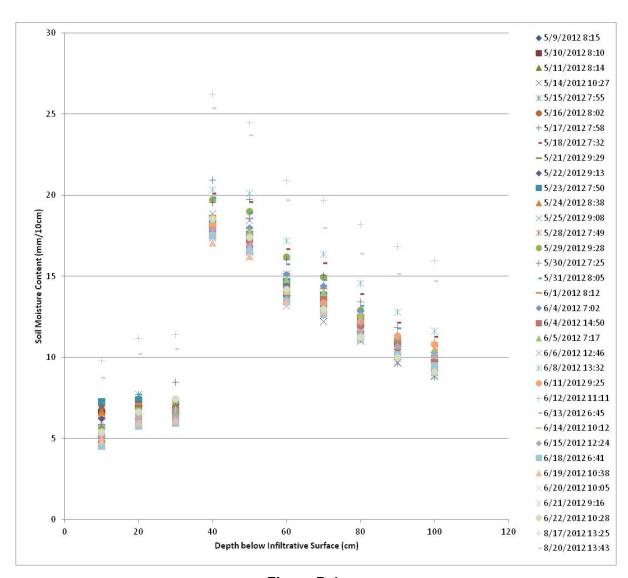


Figure D.4
Soil Moisture Test Area 2 Center

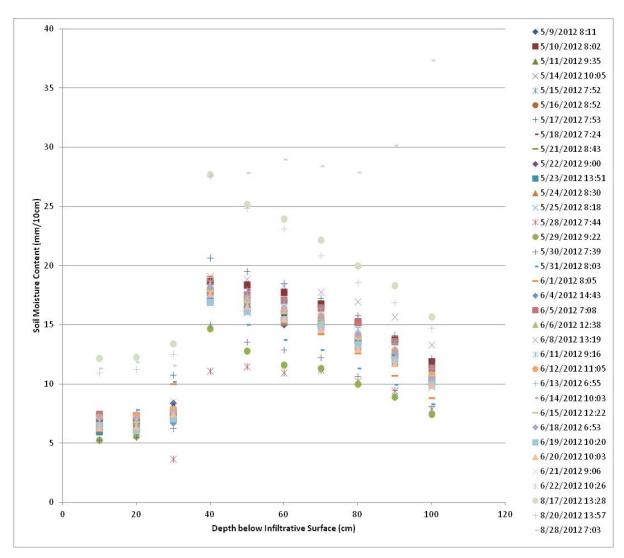


Figure D.5
Soil Moisture Test Area 3 North

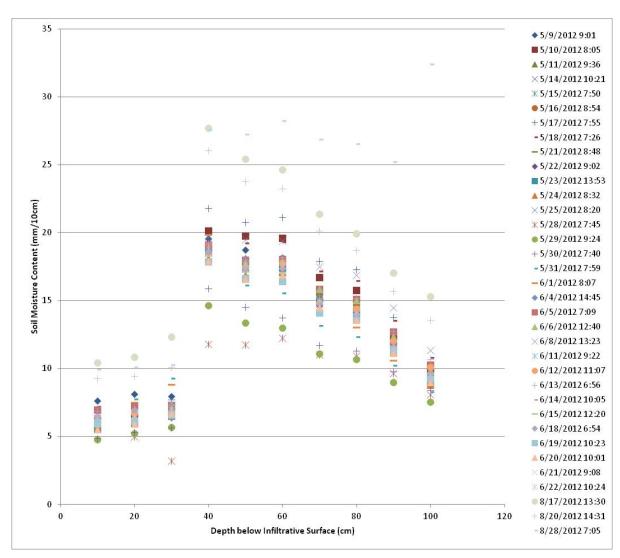


Figure D.6
Soil Moisture Test Area 3 Center

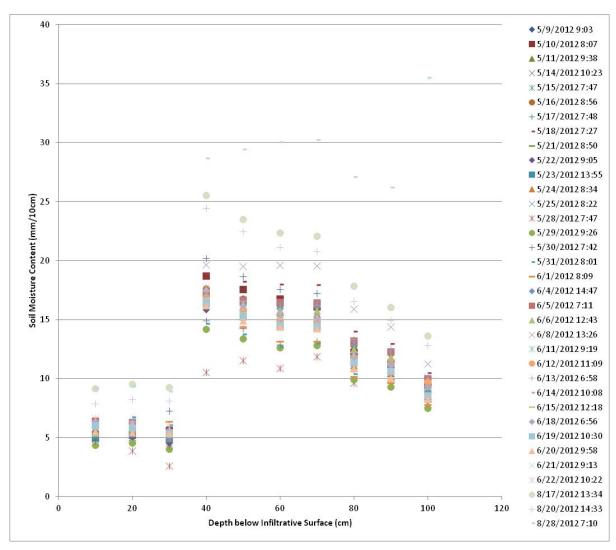


Figure D.7
Soil Moisture Test Area 3 South

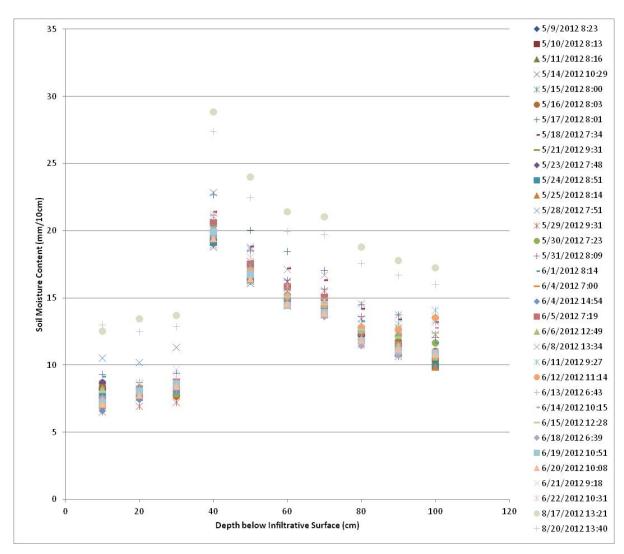


Figure D.8
Soil Moisture Test Area 4 Center



Appendix E: Laboratory Report

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Laboratory Report

Project Name		S&GW Test F	acility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed Di	lution
Sample Description		PNRS II STE - Tank 1						
Matrix		Wastewater						
SAL Sample Number		1208986-01						
Date/Time Collected		08/23/12 09:55						
Collected by		Sean Schmidt						
Date/Time Received		08/23/12 13:00						
Inorganics								
Ammonia as N	mg/L	37	EPA 350.1	0.80	0.19		08/29/12 13:44	20
Ammonium as NH4	mg/L	47	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	1
Carbonaceous BOD	mg/L	40	SM 5210B	2	2	08/24/12 14:40	08/29/12 13:53	1
Chloride	mg/L	91	EPA 300.0	0.20	0.050		08/30/12 02:23	1
Nitrate+Nitrite (N)	mg/L	0.02	EPA 353.2	0.04	0.01		08/27/12 13:47	1
Phosphorous - Total as P	mg/L	5.5	SM 4500P-E	0.40	0.10	08/24/12 11:50	08/27/12 12:39	10
Total Alkalinity	mg/L	360	SM 2320B	8.0	2.0	08/25/12 10:00	08/27/12 09:11	1
Total Kjeldahl Nitrogen	mg/L	64	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 14:57	20.83
Total Solids	mg/L	450	SM 2540B	10	10	08/26/12 09:11	08/27/12 09:13	1
Total Suspended Solids	mg/L	58	SM 2540D	1	1	08/27/12 09:55	08/28/12 09:13	1
Microbiology								
Fecal Coliforms	CFU/100 ml	92,000	SM 9222D	1	1	08/23/12 14:02	08/24/12 12:37	1
Sample Description		STE Pump Tank						
Matrix		Wastewater						
SAL Sample Number		1208986-02						
Date/Time Collected		08/23/12 10:55						
Collected by		Sean Schmidt						
Date/Time Received		08/23/12 13:00						
Inorganics								
Ammonia as N	mg/L	54	EPA 350.1	0.80	0.19		08/29/12 13:46	20
Ammonium as NH4	mg/L	21	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	1
Carbonaceous BOD	mg/L	20	SM 5210B	2	2	08/24/12 14:40	08/29/12 13:53	1
Chloride	mg/L	72	EPA 300.0	0.20	0.050		08/29/12 01:10	1
Nitrate+Nitrite (N)	mg/L	0.04	EPA 353.2	0.04	0.01		08/27/12 13:49	1
Phosphorous - Total as P	mg/L	5.2	SM 4500P-E	0.40	0.10	08/24/12 11:50	08/27/12 12:39	10
Sulfate	mg/L	53	EPA 300.0	0.60	0.20		08/29/12 01:10	1
Total Alkalinity	mg/L	360	SM 2320B	8.0	2.0	08/25/12 10:00	08/27/12 09:11	1
Total Kjeldahl Nitrogen	mg/L	61	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 14:58	20.83
Total Solids	mg/L	500	SM 2540B	10	10	08/26/12 09:11	08/27/12 09:13	1
Total Suspended Solids	mg/L	15	SM 2540D	1	1	08/27/12 09:55	08/28/12 09:13	
Microbiology	-							
Fecal Coliforms	CFU/100 ml	84,000	SM 9222D	1	1	08/23/12 14:02	08/24/12 12:37	1

Florida Certification Number: E84129

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed D	ilution
Sample Description		STE Pump Tank - D	UP					
Matrix		Wastewater						
SAL Sample Number		1208986-03						
Date/Time Collected		08/23/12 11:00						
Collected by		Sean Schmidt						
Date/Time Received		08/23/12 13:00						
Inorganics								
Ammonia as N	mg/L	54	EPA 350.1	0.80	0.19		08/29/12 13:48	3 20
Ammonium as NH4	mg/L	45	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	5 1
Carbonaceous BOD	mg/L	8	SM 5210B	2	2	08/24/12 14:40	08/29/12 13:53	3 1
Chloride	mg/L	68	EPA 300.0	0.20	0.050		08/29/12 01:10) 1
Nitrate+Nitrite (N)	mg/L	0.04	EPA 353.2	0.04	0.01		08/27/12 13:51	1
Phosphorous - Total as P	mg/L	5.5	SM 4500P-E	0.40	0.10	08/24/12 11:50	08/27/12 12:40	10
Sulfate	mg/L	55	EPA 300.0	0.60	0.20		08/29/12 01:10) 1
Total Alkalinity	mg/L	360	SM 2320B	8.0	2.0	08/25/12 10:00	08/27/12 09:11	1
Total Kjeldahl Nitrogen	mg/L	60	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 14:59	20.83
Total Solids	mg/L	490	SM 2540B	10	10	08/26/12 09:11	08/27/12 09:13	3 1
Total Suspended Solids	mg/L	15	SM 2540D	1	1	08/27/12 09:55	08/28/12 09:13	3 1
Microbiology								
Fecal Coliforms	CFU/100 ml	79,000	SM 9222D	1	1	08/23/12 14:02	08/24/12 12:37	1
Sample Description		NO3 Clarifier						
Matrix		Wastewater						
SAL Sample Number		1208986-04						
Date/Time Collected		08/23/12 10:45						
Collected by		Sean Schmidt						
Date/Time Received		08/23/12 13:00						
<u>Inorganics</u>								
Ammonia as N	mg/L	11	EPA 350.1	0.80	0.19		08/29/12 13:49	20
Ammonium as NH4	mg/L	14	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	5 1
Carbonaceous BOD	mg/L	8	SM 5210B	2	2	08/24/12 14:40	08/29/12 13:53	3 1
Chloride	mg/L	72	EPA 300.0	0.20	0.050		08/31/12 10:32	2 1
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	0.40	0.10		08/27/12 16:34	10
Total Kjeldahl Nitrogen	mg/L	23	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 15:00	20.83
Total Solids	mg/L	440	SM 2540B	10	10	08/26/12 09:11	08/27/12 09:13	3 1
Total Suspended Solids	mg/L	11	SM 2540D	1	1	08/28/12 14:02	08/30/12 14:39) 1

Florida Certification Number: E84129

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Laboratory Report

Project Name		S&GW Test Fa	acility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed Dil	ution
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		NO3 Pump Tank Wastewater 1208986-05 08/23/12 10:30 Sean Schmidt 08/23/12 13:00						
<u>Inorganics</u>								
Ammonia as N	mg/L	23	EPA 350.1	0.80	0.19		08/30/12 11:39	20
Ammonium as NH4	mg/L	29	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	1
Carbonaceous BOD	mg/L	8	SM 5210B	2	2	08/24/12 14:40	08/29/12 13:53	1
Chloride	mg/L	75	EPA 300.0	0.20	0.050		08/30/12 02:23	1
Fluoride	mg/L	0.33	EPA 300.0	0.040	0.010		08/24/12 11:13	1
Nitrate (as N)	mg/L	1.6	EPA 300.0	0.04	0.01		08/24/12 11:13	1
Nitrate+Nitrite (N)	mg/L	11	EPA 353.2	0.40	0.10		08/27/12 16:34	10
Orthophosphate as P	mg/L	5.7	EPA 300.0	0.040	0.010		08/24/12 11:13	1
Phosphorous - Total as P	mg/L	5.7	SM 4500P-E	0.40	0.10	08/24/12 11:50	08/27/12 12:41	10
Sulfate	mg/L	49	EPA 300.0	0.60	0.20	00/2 // /2 / / / /	08/24/12 11:13	1
Total Alkalinity	mg/L	220	SM 2320B	8.0	2.0	08/25/12 10:00	08/27/12 09:11	1
Total Kjeldahl Nitrogen	mg/L	25	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 15:02	
Total Solids	mg/L	450	SM 2540B	10	10	08/26/12 09:11	08/27/12 09:13	1
Total Suspended Solids	mg/L	6	SM 2540D	1	1	08/27/12 09:55	08/28/12 09:13	1
	mg/L	O	0 20 .02	•		00/21/12 00:00	00/20/12 03.13	•
Metals Boron	ma/l	0.14	EPA 200.7	0.10	0.050	08/24/12 08:48	08/29/12 15:02	1
Calcium	mg/L	52	EPA 200.7	0.10	0.030	08/24/12 08:48	08/29/12 15:02	
	mg/L	0.079 I	EPA 200.7			08/24/12 08:48		1
Iron Magnasium	mg/L	18	EPA 200.7	0.10 0.50	0.020 0.020	08/24/12 08:48	08/29/12 15:02	1
Magnesium	mg/L		EPA 200.7 EPA 200.7				08/29/12 15:02	1
Manganese	mg/L	0.027		0.010	0.0010		08/29/12 15:02	1
Potassium	mg/L	21	EPA 200.7	0.050	0.010	08/24/12 08:48	08/29/12 15:02	1
Sodium	mg/L	60	EPA 200.7	0.50	0.13	08/24/12 08:48	08/29/12 15:02	1
Microbiology								
Fecal Coliforms	CFU/100 ml	2,400	SM 9222D	1	1	08/23/12 14:02	08/24/12 12:37	1
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		NO3 Pump Tank - DUP Wastewater 1208986-06 08/23/12 10:35 Sean Schmidt 08/23/12 13:00						
<u>Inorganics</u>								
Ammonia as N	mg/L	23	EPA 350.1	0.80	0.19		08/30/12 11:41	20
Ammonium as NH4	mg/L	28	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	1
Carbonaceous BOD	mg/L	42	SM 5210B	2	2	08/24/12 14:40	08/29/12 13:53	1
Chloride	mg/L	72	EPA 300.0	0.20	0.050		08/30/12 02:23	1

Florida Certification Number: E84129

NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed Di	lution
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		NO3 Pump Tank - D Wastewater 1208986-06 08/23/12 10:35 Sean Schmidt 08/23/12 13:00	UP					
Fluoride	mg/L	0.38	EPA 300.0	0.040	0.010		08/24/12 11:13	1
Nitrate (as N)	mg/L	1.6	EPA 300.0	0.04	0.01		08/24/12 11:13	1
Nitrate+Nitrite (N)	mg/L	11	EPA 353.2	0.40	0.10		08/27/12 16:35	10
Orthophosphate as P	mg/L	6.1	EPA 300.0	0.040	0.010		08/24/12 11:13	1
Phosphorous - Total as P	mg/L	6.1	SM 4500P-E	0.40	0.10	08/24/12 11:50	08/27/12 12:42	10
Sulfate	mg/L	51	EPA 300.0	0.60	0.20		08/24/12 11:13	1
Total Alkalinity	mg/L	220	SM 2320B	8.0	2.0	08/25/12 10:00	08/27/12 09:11	1
Total Kjeldahl Nitrogen	mg/L	26	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 15:03	20.83
Total Solids	mg/L	460	SM 2540B	10	10	08/26/12 09:11	08/27/12 09:13	1
Total Suspended Solids	mg/L	5	SM 2540D	1	1	08/27/12 09:55	08/28/12 09:13	1
<u>Metals</u>								
Boron	mg/L	0.14	EPA 200.7	0.10	0.050	08/24/12 08:48	08/29/12 15:12	1
Calcium	mg/L	55	EPA 200.7	0.50	0.042	08/24/12 08:48	08/29/12 15:12	1
Iron	mg/L	0.088 1	EPA 200.7	0.10	0.020	08/24/12 08:48	08/29/12 15:12	1
Magnesium	mg/L	18	EPA 200.7	0.50	0.020	08/24/12 08:48	08/29/12 15:12	1
Manganese	mg/L	0.027	EPA 200.7	0.010	0.0010	08/24/12 08:48	08/29/12 15:12	1
Potassium	mg/L	23	EPA 200.7	0.050	0.010	08/24/12 08:48	08/29/12 15:12	1
Sodium	mg/L	64	EPA 200.7	0.50	0.13	08/24/12 08:48	08/29/12 15:12	1
Microbiology								
Fecal Coliforms	CFU/100 ml	1,800	SM 9222D	1	1	08/23/12 14:02	08/24/12 12:37	1

Florida Certification Number: E84129

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

RPD

%REC

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22407 - Ion Chroma	tography 300.0) Prep								
Blank (BH22407-BLK1)					Prepared 8	& Analyzed:	08/24/12			
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
LCS (BH22407-BS1)					Prepared 8	& Analyzed:	08/24/12			
Orthophosphate as P	0.982	0.040	0.010	mg/L	0.90		109	85-115		
Sulfate	8.87	0.60	0.20	mg/L	9.0		99	85-115		
Fluoride	0.843	0.040	0.010	mg/L	0.90		94	85-115		
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115		
LCS Dup (BH22407-BSD1)					Prepared 8	k Analyzed:	08/24/12			
Orthophosphate as P	0.981	0.040	0.010	mg/L	0.90		109	85-115	0.1	200
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	0.6	200
Fluoride	0.896	0.040	0.010	mg/L	0.90		100	85-115	6	200
Sulfate	8.79	0.60	0.20	mg/L	9.0		98	85-115	0.9	200
Matrix Spike (BH22407-MS1)		Source: 1	209508-01		Prepared 8	k Analyzed:	08/24/12			
Nitrate (as N)	2.61	0.04	0.01	mg/L	1.7	0.812	106	85-115		
Orthophosphate as P	1.12	0.040	0.010	mg/L	0.90	0.127	110	85-115		
Fluoride	1.04	0.040	0.010	mg/L	0.90	0.172	96	85-115		
Sulfate	8.98	0.60	0.20	mg/L	9.0	ND	100	85-115		
Matrix Spike (BH22407-MS2)		Source: 1	209550-01		Prepared 8	k Analyzed:	08/24/12			
Fluoride	1.08	0.040	0.010	mg/L	0.90	0.211	97	85-115		
Nitrate (as N)	1.79	0.04	0.01	mg/L	1.7	0.0285	104	85-115		
Sulfate	9.68	0.60	0.20	mg/L	9.0	0.812	99	85-115		
Orthophosphate as P	0.860	0.040	0.010	mg/L	0.90	ND	96	85-115		

Spike

Source

Florida Certification Number: E84129

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Inorganics - Quality Control

A 1. 4 -	Danish	DOL	MDL	1.1	Spike	Source	0/ DEO	%REC	DDD	RPD
Analyte	Result	PQL	IVIDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22415 - Digestion f	or TP by EPA 36	5.2/SM4500	PE							
Blank (BH22415-BLK1)					Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22415-BS1)					Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.754	0.040	0.010	mg/L	0.80		94	90-110		
Matrix Spike (BH22415-MS1)		Source: 1	209476-08		Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.933	0.040	0.010	mg/L	1.0	ND	93	75-125		
Matrix Spike Dup (BH22415-MSI	O1)	Source: 1	209476-08		Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.901	0.040	0.010	mg/L	1.0	ND	90	75-125	3	25
Batch BH22444 - BOD										
Blank (BH22444-BLK1)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	2 U	2	2	mg/L						
Blank (BH22444-BLK2)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BH22444-BS1)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	190	2	2	mg/L	200		95	85-115		
LCS (BH22444-BS2)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	181	2	2	mg/L	200		90	85-115		
LCS Dup (BH22444-BSD1)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	184	2	2	mg/L	200		92	85-115	3	200

Florida Certification Number: E84129

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Inorganics - Quality Control

A a la da	Danit	DOI	MDL	11-4-	Spike	Source	0/ DEO	%REC	DDD	RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22444 - BOD										
LCS Dup (BH22444-BSD2)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	180	2	2	mg/L	200		90	85-115	0.8	200
Duplicate (BH22444-DUP1)		Source: 1	209566-01		Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	140	2	2	mg/L		150			7	25
Duplicate (BH22444-DUP2)		Source: 1	209571-01		Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	150	2	2	mg/L		180			19	25
Batch BH22504 - alkalinity										
Blank (BH22504-BLK1)					Prepared:	08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22504-BS1)					Prepared:	08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22504-MS1)		Source: 1	209007-03		Prepared:	08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	290	8.0	2.0	mg/L	120	170	95	80-120		
Matrix Spike Dup (BH22504-MSD1)		Source: 1	209007-03		Prepared:	08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	290	8.0	2.0	mg/L	120	170	95	80-120	0	26
Batch BH22702 - Digestion for 1	ΓKN by EPA	351.2								
Blank (BH22702-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Inorganics - Quality Control

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22702 - Digestion fo	or TKN by EPA	351.2								
LCS (BH22702-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	2.30	0.20	0.05	mg/L	2.5		91	90-110		
Matrix Spike (BH22702-MS1)		Source: 1	209020-20)	Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	3.69	0.20	0.05	mg/L	2.5	1.14	101	80-120		
Matrix Spike Dup (BH22702-MSD	1)	Source: 1	209020-20)	Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	3.50	0.20	0.05	mg/L	2.5	1.14	93	80-120	5	20
Batch BH22709 - TSS prep										
Blank (BH22709-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BH22709-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Suspended Solids	54.8	1	1	mg/L	50		110	85-115		
Duplicate (BH22709-DUP1)		Source: 1	209495-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Suspended Solids	162	1	1	mg/L		173			7	30
Duplicate (BH22709-DUP2)		Source: 1	209520-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Suspended Solids	84.0	1	1	mg/L		88.0			5	30
Batch BH22716 - Nitrate 353.	2 by seal									
Blank (BH22716-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L		<u> </u>				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22716 - Nitrate 353.2	by seal									
LCS (BH22716-BS1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.824	0.04	0.01	mg/L	0.80		103	90-110		
Matrix Spike (BH22716-MS1)		Source: 1	209416-02		Prepared 8	k Analyzed:	08/27/12			
Nitrate+Nitrite (N)	1.05	0.04	0.01	mg/L	1.0	ND	105	77-119		
Matrix Spike Dup (BH22716-MSD	l)	Source: 1	209416-02		Prepared 8	k Analyzed:	08/27/12			
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	ND	109	77-119	4	20
Batch BH22717 - Nitrate 353.2	by seal									
Blank (BH22717-BLK1)					Prepared 8	k Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22717-BS1)					Prepared 8	k Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.846	0.04	0.01	mg/L	0.80		106	90-110		
Matrix Spike (BH22717-MS1)		Source: 1	208986-04		Prepared 8	k Analyzed:	08/27/12			
Nitrate+Nitrite (N)	21.2	0.40	0.10	mg/L	10	12.1	91	77-119		
Matrix Spike Dup (BH22717-MSD	l)	Source: 1	208986-04		Prepared 8	k Analyzed:	08/27/12			
Nitrate+Nitrite (N)	21.1	0.40	0.10	mg/L	10	12.1	91	77-119	0.3	20
Batch BH22819 - Ion Chromat	ography 300.0	Prep								
Blank (BH22819-BLK1)					Prepared 8	& Analyzed:	08/29/12			
Sulfate	0.20 U	0.60	0.20	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Inorganics - Quality Control

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22819 - Ion Chroma	tography 300.0	Prep								
LCS (BH22819-BS1)					Prepared 8	& Analyzed:	08/29/12			
Sulfate	9.03	0.60	0.20	mg/L	9.0		100	85-115		
Chloride	3.01	0.20	0.050	mg/L	3.0		100	85-115		
LCS Dup (BH22819-BSD1)					Prepared 8	& Analyzed:	08/29/12			
Sulfate	9.21	0.60	0.20	mg/L	9.0		102	85-115	2	200
Chloride	3.09	0.20	0.050	mg/L	3.0		103	85-115	3	200
Matrix Spike (BH22819-MS1)		Source: 1	209452-01		Prepared 8	& Analyzed:	08/29/12			
Sulfate	9.75	0.60	0.20	mg/L	9.0	0.601	102	85-115		
Chloride	10.0	0.20	0.050	mg/L	3.0	6.87	104	80-120		
Matrix Spike (BH22819-MS2)		Source: 1	208986-03		Prepared 8	& Analyzed:	08/29/12			
Chloride	99.6	0.20	0.050	mg/L	30	68.1	105	80-120		
Sulfate	145	0.60	0.20	mg/L	90	54.7	100	85-115		
Batch BH22830 - TSS prep										
Blank (BH22830-BLK1)					Prepared:	08/28/12 Ar	nalyzed: 08	/30/12		
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BH22830-BS1)					Prepared:	08/28/12 Ar	nalyzed: 08	/30/12		
Total Suspended Solids	54.2	1	1	mg/L	50		108	85-115		
Duplicate (BH22830-DUP1)		Source: 1	209561-01		Prepared:	08/28/12 Ar	nalyzed: 08	/30/12		
Total Suspended Solids	164	1	1	mg/L		166			1	30
Duplicate (BH22830-DUP2)		Source: 1	209564-01		Prepared:	08/28/12 Ar	nalyzed: 08	/30/12		
Total Suspended Solids	94.0	1	1	mg/L		100			6	30

Florida Certification Number: E84129

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Inorganics - Quality Control

A - a la da	Desult	DOL	MDL	11-3-	Spike	Source	0/ DEO	%REC	DDD	RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22841 - Ammonia b	y SEAL									
Blank (BH22841-BLK1)					Prepared 8	& Analyzed:	08/29/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22841-BS1)					Prepared 8	& Analyzed:	08/29/12			
Ammonia as N	0.51	0.040	0.009	mg/L	0.50		102	90-110		
Matrix Spike (BH22841-MS1)		Source: 1	209404-07		Prepared 8	& Analyzed:	08/29/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	0.042	90	90-110		
Matrix Spike Dup (BH22841-MS	D1)	Source: 1	209404-07		Prepared 8	& Analyzed:	08/29/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.042	92	90-110	2	10
Batch BH22909 - Ion Chroma	atography 300.0	Prep								
Blank (BH22909-BLK1)					Prepared 8	& Analyzed:	08/30/12			
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH22909-BS1)					Prepared 8	& Analyzed:	08/30/12			
Chloride	2.89	0.20	0.050	mg/L	3.0		96	85-115		
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115		
Sulfate	8.86	0.60	0.20	mg/L	9.0		98	85-115		
Fluoride	0.921	0.040	0.010	mg/L	0.90		102	85-115		
LCS Dup (BH22909-BSD1)					Prepared 8	& Analyzed:	08/30/12			
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	1	200
Sulfate	8.89	0.60	0.20	mg/L	9.0		99	85-115	0.3	200
Fluoride	0.931	0.040	0.010	mg/L	0.90		103	85-115	1	200
Chloride	2.89	0.20	0.050	mg/L	3.0		96	85-115	0	200

Florida Certification Number: E84129

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22909 - Ion Chrom	atography 300.0	Prep								
Matrix Spike (BH22909-MS1)		-	209746-01		Prepared 8	& Analyzed:	08/30/12			
Chloride	7.15	0.20	0.050	mg/L	3.0	4.01	105	80-120		
Nitrate (as N)	1.87	0.04	0.01	mg/L	1.7	0.206	98	85-115		
Sulfate	10.2	0.60	0.20	mg/L	9.0	1.49	97	85-115		
Fluoride	1.02	0.040	0.010	mg/L	0.90	0.0906	103	85-115		
Matrix Spike (BH22909-MS2)		Source: 1	208986-06		Prepared 8	& Analyzed:	08/30/12			
Sulfate	142	0.60	0.20	mg/L	90	53.9	98	85-115		
Nitrate (as N)	19.2	0.04	0.01	mg/L	17	2.25	100	85-115		
Chloride	102	0.20	0.050	mg/L	30	71.6	101	80-120		
Fluoride	9.55	0.040	0.010	mg/L	9.0	0.506	100	85-115		
Batch BH22927 - Ammonia I	y SEAL									
Blank (BH22927-BLK1)					Prepared 8	k Analyzed:	08/30/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22927-BS1)					Prepared 8	k Analyzed:	08/30/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50		100	90-110		
Matrix Spike (BH22927-MS1)		Source: 1	209015-07		Prepared 8	k Analyzed:	08/30/12			
Ammonia as N	0.48	0.040	0.009	mg/L	0.50	ND	96	90-110		
Matrix Spike Dup (BH22927-MS	D1)	Source: 1	209015-07		Prepared 8	k Analyzed:	08/30/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	99	90-110	4	10
Batch BH23020 - Ion Chrom	atography 300.0	Prep								
Blank (BH23020-BLK1)					Prepared 8	k Analyzed:	08/31/12			
Chloride	0.050 U	0.20	0.050	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Inorganics - Quality Control

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH23020 - Ion Chroma	tography 300.0	Prep								
LCS (BH23020-BS1)					Prepared 8	& Analyzed:	08/31/12			
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115		
LCS Dup (BH23020-BSD1)					Prepared 8	& Analyzed:	08/31/12			
Chloride	2.92	0.20	0.050	mg/L	3.0		97	85-115	1	200
Matrix Spike (BH23020-MS1)		Source: '	1209015-20		Prepared 8	& Analyzed:	08/31/12			
Chloride	8.76	0.20	0.050	mg/L	3.0	5.69	102	80-120		
Batch BH23105 - TS prep										
Blank (BH23105-BLK1)					Prepared:	08/26/12 Ar	nalyzed: 08	/27/12		
Total Solids	10 U	10	10	mg/L						
Duplicate (BH23105-DUP1)		Source: '	1208986-01		Prepared:	08/26/12 Ar	nalyzed: 08	/27/12		
Total Solids	460	10	10	mg/L		450			2	20

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22402 - Metals Pro	eparation for EPA	Method 20	00.7							
Blank (BH22402-BLK1)					Prepared: (08/24/12 A	nalyzed: 08/	/29/12		
Manganese	0.0010 U	0.010	0.0010	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
Potassium	0.010 U	0.050	0.010	mg/L						
Sodium	0.13 U	0.50	0.13	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Magnesium	0.041 I	0.50	0.020	mg/L						
Blank (BH22402-BLK2)					Prepared: (08/24/12 A	nalyzed: 08/	/30/12		
Iron	0.020 U	0.10	0.020	mg/L						
Potassium	0.79 V	0.050	0.010	mg/L						
Manganese	0.010 V	0.010	0.0010	mg/L						
Boron	0.33 V	0.10	0.050	mg/L						
Magnesium	0.20 1	0.50	0.020	mg/L						
Sodium	00,000,000 V	0.50	0.13	mg/L						
Calcium	0.89 V	0.50	0.042	mg/L						
LCS (BH22402-BS1)					Prepared: (08/24/12 A	nalyzed: 08/	/29/12		
Potassium	21	0.050	0.010	mg/L	20		105	85-115		
Iron	8.3	0.10	0.020	mg/L	8.0		104	85-115		
Calcium	22	0.50	0.042	mg/L	20		108	85-115		
Boron	0.40	0.10	0.050	mg/L	0.40		100	85-115		
Sodium	21	0.50	0.13	mg/L	20		107	85-115		
Magnesium	22	0.50	0.020	mg/L	20		108	85-115		
Manganese	0.39	0.010	0.0010	mg/L	0.40		99	85-115		
Matrix Spike (BH22402-MS1)		Source: 1	209463-02		Prepared: (08/24/12 A	nalyzed: 08/	/29/12		
Calcium	110	0.50	0.042	mg/L	20	91	116	70-130		
Iron	8.3	0.10	0.020	mg/L	8.0	ND	104	70-130		
Boron	0.42	0.10	0.050	mg/L	0.40	ND	106	70-130		
Sodium	28	0.50	0.13	mg/L	20	6.8	108	70-130		
Magnesium	23	0.50	0.020	mg/L	20	1.8	107	70-130		
Manganese	0.40	0.010	0.0010	mg/L	0.40	ND	100	70-130		
Potassium	22	0.050	0.010	mg/L	20	0.29	108	70-130		

Florida Certification Number: E84129

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Metals - Quality Control

Magnesium

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit

Matrix Spike (BH22402-MS2)		Source: 1	209469-01		Prepared:	08/24/12 An	alyzed: 08	3/29/12		
Magnesium	19	0.50	0.020	mg/L	20	0.33	94	70-130		
Sodium	0.13 U,J5	0.50	0.13	mg/L	20	ND		70-130		
Manganese	0.38	0.010	0.0010	mg/L	0.40	0.0018	93	70-130		
Boron	0.47	0.10	0.050	mg/L	0.40	0.061	101	70-130		
Potassium	51 J5	0.050	0.010	mg/L	20	20	158	70-130		
Calcium	20	0.50	0.042	mg/L	20	0.76	97	70-130		
Iron	7.5	0.10	0.020	mg/L	8.0	0.063	93	70-130		
Matrix Spike Dup (BH22402-MSD1)		Source: 1	1209463-02		Prepared:	08/24/12 An	alyzed: 08	3/29/12		
Potassium	21	0.050	0.010	mg/L	20	0.29	101	70-130	6	30
Manganese	0.39	0.010	0.0010	mg/L	0.40	ND	98	70-130	2	30
Sodium	28	0.50	0.13	mg/L	20	6.8	108	70-130	0.4	30
Calcium	110	0.50	0.042	mg/L	20	91	112	70-130	8.0	30
Magnesium	22	0.50	0.020	mg/L	20	1.8	101	70-130	5	30
Boron	0.41	0.10	0.050	mg/L	0.40	ND	103	70-130	3	30
Iron	8.0	0.10	0.020	mg/L	8.0	ND	101	70-130	3	30
Matrix Spike Dup (BH22402-MSD2)		Source: 1	1209469-01		Prepared:	08/24/12 An	alyzed: 08	3/29/12		
Sodium	0.13 U,J5	0.50	0.13	mg/L	20	ND		70-130		30
Manganese	0.37	0.010	0.0010	mg/L	0.40	0.0018	93	70-130	0.3	30
Iron	7.6	0.10	0.020	mg/L	8.0	0.063	94	70-130	1	30
Potassium	50 J5	0.050	0.010	mg/L	20	20	148	70-130	4	30
Calcium	20	0.50	0.042	mg/L	20	0.76	96	70-130	0.9	30
Boron	0.47	0.10	0.050	mg/L	0.40	0.061	102	70-130	0.6	30

0.50

0.020

mg/L

20

0.33

94

70-130

0.04

19

Florida Certification Number: E84129
NELAP Accredited

30

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22328 - FC-MF										
Blank (BH22328-BLK1)					Prepared:	08/23/12 Aı	nalyzed: 08/	24/12		
Fecal Coliforms	1 U	1	1	CFU/100 r	ml					
Duplicate (BH22328-DUP1)		Source: 1	208986-	01	Prepared:	08/23/12 Aı	nalyzed: 08/	24/12		
Fecal Coliforms	81.000	1	1	CFU/100 r	ml	92000			13	200

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 23, 2012 Work Order: 1208986

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.

- V Analyte was detected in both the sample and the associated method blank.
- J5 Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.

Questions regarding this report should be directed to:

ryn Nordmark
Telephone (813) 855-1844 FAX (813) 855-2218
ryn@southernanalyticallabs.com

or to Client Services (clientservices@southernanalyticallabs.com).

Finder

SAL Project No. 1208 986

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYNEW BOULEVARD, OLD SMAR, FL 34677 813-855-1844 fex 813-855-2218

	Client Name	Hazen and Sawyer	ī		,					5								
Mark Codes Mar					:													
Supplied Codes C		&GW Test Faci	ity SE#2															
Standard Continue	Samplers: (Signature)	FF						_	PARAM	ETER / (CONTAINE	R DESCRIF	NOIT					
Sample S	Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water								⁵OS [₹]		alinity, CBOD,	[€] ON				Á	9.1	
STEST STES		əjs(əmi	xintsA		LKN' NO×' N	CI, Alkalinity TSS	ILP, Cool =C-MF	TSS, SO4	1LP, Cool	1LP, Cool 1LP, Cool	Z50mL P, H		00	Hq	Conductivit	Temperatu	
15 E - 1 mm 1		242		v §	+	L .		-		_		├		92.0	7.0	1052	2.7.2	
				XX	×	-		2 2			 			0.15	7.6		153	
Comparison Com		<u> </u>		700	×	-		_						0,15	7,6		\$152	
	Clarry		3	1	×									$a\mathcal{U}$	_	870	270	
1	NO3 Acta		020	WW	×	-		2	_		-	-		O.7		738	7.7	
	-T	-	1030		×	-		2			-	-		2.0	f 7.7		7.1	
Sea interfere 1725 Received Sea interfere 1725 Sea inter		-		1											.			
The paretime. [325 Received: Date/Ime; [325 Received: Date/Ime; [327] 320 Date/Ime; [3																		
The parent of th																		
BankTime: 1935 Received: BaleTime: Paceived: PaterTime: PaterTime: Paceived: PaterTime:																	\dashv	
Date/Time:																		
Seal intact? Seal intact. Seal																		
Date/Time: Received: Date/Time: Received: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Received: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Received: Date/Time: Received: Date/Time: Chain of Custody	Date/Time:	S	X	1	Date/Time	193			eal intact?			z ≻ {	3					
Date/Time: Received: Date/Time: Received: Date/Time: Received: Date/Time: Received: Date/Time: Notatives indicated? Notatives indicated indicate	Date/Time:	_			Date/Time	2	1		amples inta	ict upon ar	rival?	Ó (¥ Ž					
Date/Time: Received: Date/Time: Received: Date/Time: Proper preservatives indicated? N NA Received: Date/Time: Volatiles rec'd w/out headspace? Y N NA Proper containers used? Y N NA Proper containers used? Chain of Custody	180	3/2 K	Muds	nout	8/2	3/12	3		sceived on	ice? Tem		ڰ	Š.					
Date/Time: Received: Date/Time: Volatiles rec'd within holding time? (Y Date/Time: Received: Date/Time: Proper containers used? (Y	Dat				Date/Time			<u> </u>	oper pres	arvatives ii	ndicated?	ල් (∀ Ž					
Date/Time: Received: Date/Time: Proper containers used?		Received:			Date/Tim			æ >	ec'd within olatiles rec	holding tin d w/out h	ne? eadspace?	න් <i>,</i> (₹					
Chain of Custody		Received:			Date/Tim		ŧ		oper conta	ainers use	ćF	(Z)) ^{&}				=	120898
	Chair of Custody, xe		ŧ					-				5 	ain of Cus	tody				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1208987 Revised Report

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA1-PAN-12-N Groundwater 1208987-01 08/24/12 11:35 Josephine Edeback 08/24/12 15:10	-Hirst					
Inorganics								
Ammonia as N	mg/L	0.21	EPA 350.1	0.040	0.009		08/26/12 10:56	MMF
Ammonium as NH4	mg/L	0.27	EPA 350.1	0.01	0.005	09/24/12 16:42	09/24/12 16:44	MMF
Chloride	mg/L	68	EPA 300.0	0.20	0.050		09/06/12 01:26	JAG
Nitrate+Nitrite (N)	mg/L	32	EPA 353.2	2.0	0.50		08/27/12 11:46	MMF
Total Kjeldahl Nitrogen	mg/L	5.6	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 12:25	MMF
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA1-LY-24-C Groundwater 1208987-02 08/20/12 08:40 Josephine Edeback 08/20/12 15:10	-Hirst					
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 11:42	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chloride	mg/L	82	EPA 300.0	0.20	0.050		08/22/12 16:29	JAG
Nitrate+Nitrite (N)	mg/L	53	EPA 353.2	4.0	1.0		08/21/12 14:01	MMF
Total Kjeldahl Nitrogen	mg/L	3.9	EPA 351.2	0.20	0.05	08/20/12 16:39	08/22/12 13:27	MMF
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA1-LY-12-S Groundwater 1208987-03 08/20/12 09:00 Josephine Edeback 08/20/12 15:10	-Hirst					
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 11:44	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chloride	mg/L	60	EPA 300.0	0.20	0.050		08/22/12 00:49	JAG
Nitrate+Nitrite (N)	mg/L	13	EPA 353.2	0.79	0.20		08/21/12 13:23	MMF
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	08/20/12 16:39	08/22/12 13:29	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1208987

Revised Report

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA1-LY-24-S						
Matrix		Water						
SAL Sample Number		1208987-04						
Date/Time Collected		08/20/12 09:15						
Collected by		Josephine Edeback	-Hirst					
Date/Time Received		08/20/12 15:10						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 11:46	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chemical Oxygen Demand	mg/L	24 I	EPA 410.4	25	10	08/22/12 09:30	08/22/12 11:35	CDB
Chloride	mg/L	66	EPA 300.0	0.20	0.050		08/22/12 00:49	JAG
Nitrate+Nitrite (N)	mg/L	39	EPA 353.2	0.79	0.20		08/21/12 13:25	MMF
Phosphorous - Total as P	mg/L	0.26	SM 4500P-E	0.040	0.010	08/21/12 11:40	08/22/12 12:35	MMF
Total Alkalinity	mg/L	32	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	2.4	EPA 351.2	0.20	0.05	08/20/12 16:39	08/22/12 13:31	MMF
Sample Description		TA1-LY-42-S						
Matrix		Water						
SAL Sample Number		1208987-05						
Date/Time Collected		08/20/12 09:25						
Collected by		Josephine Edeback	-Hirst					
Date/Time Received		08/20/12 15:10						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 11:48	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/22/12 09:30	08/22/12 11:35	CDB
Chloride	mg/L	69	EPA 300.0	0.20	0.050		08/22/12 00:49	JAG
Nitrate+Nitrite (N)	mg/L	50	EPA 353.2	4.0	1.0		08/21/12 14:03	MMF
Phosphorous - Total as P	mg/L	0.028 I	SM 4500P-E	0.040	0.010	08/21/12 11:40	08/22/12 12:36	MMF
Total Alkalinity	mg/L	11	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	08/20/12 16:39	08/22/12 13:32	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1208987

Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22049 - Digestion for	r TKN by EPA	351.2								
Blank (BH22049-BLK1)					Prepared:	08/20/12 Ar	nalyzed: 08/	/22/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22049-BS1)					Prepared:	08/20/12 Ar	nalyzed: 08/	/22/12		
Total Kjeldahl Nitrogen	2.74	0.20	0.05	mg/L	2.5		108	90-110		
Matrix Spike (BH22049-MS1)		Source: 1	209326-07		Prepared:	08/20/12 Ar	nalyzed: 08/	/22/12		
Total Kjeldahl Nitrogen	2.99	0.20	0.05	mg/L	2.5	0.460	100	80-120		
Matrix Spike Dup (BH22049-MSD1	1)	Source: 1	209326-07		Prepared:	08/20/12 Ar	nalyzed: 08/	/22/12		
Total Kjeldahl Nitrogen	2.98	0.20	0.05	mg/L	2.5	0.460	99	80-120	0.2	20
Batch BH22108 - Ion Chromat	ography 300.0	Prep								
Blank (BH22108-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH22108-BS1)					Prepared 8	& Analyzed:	08/22/12			
Chloride	2.71	0.20	0.050	mg/L	3.0		90	85-115		
LCS Dup (BH22108-BSD1)					Prepared 8	& Analyzed:	08/22/12			
Chloride	2.71	0.20	0.050	mg/L	3.0		90	85-115	0	200
Matrix Spike (BH22108-MS1)		Source: 1	209192-04		Prepared 8	& Analyzed:	08/22/12			
Chloride	119	0.20	0.050	mg/L	30	89.9	97	80-120		
Matrix Spike (BH22108-MS2)		Source: 1	208988-03		Prepared 8	& Analyzed:	08/22/12			
Chloride	95.7	0.20	0.050	mg/L	30	67.0	96	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1208987

Revised Report

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte	Result	FQL	IVIDL	Ullits	Levei	Result	70KEC	LIIIIIIS	KFD	LIIIII
Batch BH22109 - Nitrate 353.	2 by seal									
Blank (BH22109-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22109-BS1)					Prepared 8	& Analyzed:	08/21/12			
Nitrate+Nitrite (N)	0.768	0.04	0.01	mg/L	0.80		96	90-110		
Matrix Spike (BH22109-MS1)		Source: 1	209354-01		Prepared 8	k Analyzed:	08/21/12			
Nitrate+Nitrite (N)	1.92	0.04	0.01	mg/L	1.0	0.888	103	77-119		
Matrix Spike Dup (BH22109-MSD	01)	Source: 1	209354-01		Prepared 8	& Analyzed:	08/21/12			
Nitrate+Nitrite (N)	1.79	0.04	0.01	mg/L	1.0	0.888	90	77-119	7	20
Batch BH22110 - Ammonia b	y SEAL									
Blank (BH22110-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22110-BS1)					Prepared 8	k Analyzed:	08/21/12			
Ammonia as N	0.52	0.040	0.009	mg/L	0.50		105	90-110		
Matrix Spike (BH22110-MS1)		Source: 1	209326-07		Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	99	90-110		
Batch BH22114 - Digestion for	or TP by EPA 36	5.2/SM4500	PE							
Blank (BH22114-BLK1)					Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1208987

Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22114 - Digestion for T	P by EPA 36	55.2/SM4500	PE							
LCS (BH22114-BS1)					Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	0.822	0.040	0.010	mg/L	0.80		103	90-110		
Matrix Spike (BH22114-MS1)		Source: 1	209304-02		Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	1.08	0.040	0.010	mg/L	1.0	0.0385	104	75-125		
Matrix Spike Dup (BH22114-MSD1)		Source: 1	209304-02		Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0385	98	75-125	6	25
Batch BH22119 - COD prep										
Blank (BH22119-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH22119-BS1)					Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	47	25	10	mg/L	50		94	90-110		
Matrix Spike (BH22119-MS1)		Source: 1	208997-04		Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	63	25	10	mg/L	50	15	96	85-115		
Matrix Spike Dup (BH22119-MSD1)		Source: 1	208997-04		Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	58	25	10	mg/L	50	15	86	85-115	8	32
Batch BH22136 - alkalinity										
Blank (BH22136-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L			<u> </u>			

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1208987

Revised Report

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte	reguit	1 04	11102	Office	LCVCI	resuit	701 KLO	Liiiilo	IN D	Lilling
Batch BH22136 - alkalinity										
Blank (BH22136-BLK2)					Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22136-BS1)					Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
LCS (BH22136-BS2)					Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22136-MS1)		Source: 1	209336-06		Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120		
Matrix Spike (BH22136-MS2)		Source: 1	209336-07		Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	250	8.0	2.0	mg/L	120	140	86	80-120		
Matrix Spike Dup (BH22136-MSD1)		Source: 1	209336-06		Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	0	26
Matrix Spike Dup (BH22136-MSD2)		Source: 1	209336-07		Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	4	26
Batch BH22211 - Ion Chromato	graphy 300.0	Prep								
Blank (BH22211-BLK1)					Prepared 8	Analyzed:	08/22/12			
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH22211-BS1)					Prepared 8	Analyzed:	08/22/12			
Chloride	2.92	0.20	0.050	mg/L	3.0		97	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1208987

Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22211 - Ion Chromat	ography 300.0 F	Prep								
LCS Dup (BH22211-BSD1)					Prepared 8	Analyzed:	08/22/12			
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115	2	200
Matrix Spike (BH22211-MS1)		Source: 1	209369-01		Prepared 8	Analyzed:	08/22/12			
Chloride	0.050 U,+O	0.20	0.050	mg/L	3.0	ND		80-120		
Matrix Spike (BH22211-MS2)		Source: 1	208997-05		Prepared 8	Analyzed:	08/22/12			
Chloride	93.7	0.20	0.050	mg/L	30	63.0	102	80-120		
Batch BH22601 - Ammonia by	SEAL									
Blank (BH22601-BLK1)					Prepared 8	Analyzed:	08/26/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22601-BS1)					Prepared 8	Analyzed:	08/26/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		97	90-110		
Matrix Spike (BH22601-MS1)		Source: 1	209380-04		Prepared 8	Analyzed:	08/26/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.032	94	90-110		
Matrix Spike Dup (BH22601-MSD	1)	Source: 1	209380-04		Prepared 8	Analyzed:	08/26/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.032	93	90-110	2	10
Batch BH22701 - Digestion fo	r TKN by EPA 3	51.2								
Blank (BH22701-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1208987

Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22701 - Digestion fo	r TKN by EPA	351.2								
LCS (BH22701-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	2.65	0.20	0.05	mg/L	2.5		105	90-110		
Matrix Spike (BH22701-MS1)		Source: 1	208987-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	7.94	0.20	0.05	mg/L	2.5	5.56	94	80-120		
Matrix Spike Dup (BH22701-MSD	1)	Source: 1	208987-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	8.31	0.20	0.05	mg/L	2.5	5.56	108	80-120	4	20
Batch BH22704 - Nitrate 353.2	2 by seal									
Blank (BH22704-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22704-BS1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.786	0.04	0.01	mg/L	0.80		98	90-110		
Matrix Spike (BH22704-MS1)		Source: 1	209016-21		Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	12.4	0.40	0.10	mg/L	10	2.55	99	77-119		
Matrix Spike Dup (BH22704-MSD	1)	Source: 1	209016-21		Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	12.7	0.40	0.10	mg/L	10	2.55	102	77-119	2	20
Batch Bl20517 - Ion Chromato	ography 300.0	Prep								
Blank (Bl20517-BLK1)					Prepared 8	& Analyzed:	09/06/12			
Chloride	0.050 U	0.20	0.050	mg/L			<u> </u>	<u> </u>		<u> </u>

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1208987

Revised Report

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch Bl20517 - Ion Chromat	tography 300.0	Prep								
LCS (BI20517-BS1)					Prepared 8	& Analyzed:	09/06/12			
Chloride	2.94	0.20	0.050	mg/L	3.0		98	85-115		
LCS Dup (BI20517-BSD1)					Prepared 8	& Analyzed:	09/06/12			
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115	0.3	200
Matrix Spike (Bl20517-MS1)		Source: 1	1209988-01		Prepared 8	& Analyzed:	09/06/12			
Chloride	10.3	0.20	0.050	mg/L	3.0	7.03	109	80-120		-
Matrix Spike (BI20517-MS2)		Source: 1	1209712-01		Prepared 8	& Analyzed:	09/06/12			
Chloride	16.8	0.20	0.050	ma/L	3.0	14.0	93	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1208987 Revised Report

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

+O Matrix spike source sample was over the reccommended range for the method.

Finder



SOUTHERN ANALYTICAL LABORATORIES, INC. 110BAYNEWBOULEVARD. OLDSMAR, FL. 34677 8134855-1844 fex 813455-2218

oren name	Hazen	Hazen and Sawyer	÷							Conta	Contact / Phone:	<u></u>						
Project Name / Location										_								
Samplere: (Signoffice)	S&GW	S&GW Test Facility SE#2	ty SE#2		t													
Jampiera (Jugualdie)	17								24040	707.031.			CH		İ			
Mathx Codes:		_						٩				700				-	L	
UW-Umking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water	stewater SO-Soil er O-Other					ł4 °0											 	
Sample Description	Ē	əteC	əmij	xinteN	omposite ds16		15, Cool	50mL P, H ₂ S КИ, ИОх, ИН LP, Соо!	l, Alkalinity						0	H	onductivity emperature	o. of Containe er each locatio
01 TA1-PAN-12-N		Ellerhe:83	01135		×	L -	_	L L					_	-	\top	12	3	N
02 TA1-LY-24-C		04 20 10 100 100	0480	GW	×	-	-] 				_			6.52 C.4	1	939 28,0	7
03 TA1-LY-12-S		08/20/10 0900	0060	GW	×	-	1								6.76	1	F.82	7
04 TA1-LY-24-&S		08/20/12 0915	2160	GW	×			1 1									968 28.9	L
05 TA1-LY-42-S		SZ 10/11/01/X	0925	GW	×			1 1							5,95			
						+										-		
					<u> </u>	-		-					<u> </u>		-	-	<u> </u>	
													_			-	_	
					\dashv	\dashv	\dashv											
						_		+	+						+	-	-	
Containers Prepared/ Relinquished: A	Date/Time: 1960	Received:	1	33	Date/Time:	1800	0	Sea	Seal intact?			> z	(-	-	
Relinquished Dat		Receipt	1 /		ite/Time:	Date/Time: 15(0)	00	ris &	Samples intact upon arrival? Received on ice? Temp	upon arriva	일	Č	e v					
}	Date/Time:	Received:		<u> </u>	Date/Time:			± T	Proper preservatives indicated?	tives indica	ited?	Š	4 ≥ −					
Relinquished: Dat	Date/Time:	Received:		<u> </u>	Date/Time:			Rec Vola	Rec'd within holding time? Volatiles rec'd w/out headspace?	ding time?	pace?	ð;	∮ (2 >					
Refinquished: Date	Date/Time:	Received:		Ö	Date/Time:			Ŧ	Proper containers used?	¿pasn s.		Š) ≸					1208987
Chain of Custody, vis Rev.Date 1/1/9/01	[Chg	Chain of Custody	stody				120030

Page 11 of 11

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

Laboratory Report

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA2-PAN-12-N						
Matrix		Groundwater						
SAL Sample Number		1208988-01						
Date/Time Collected		08/24/12 11:15						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 15:10						
Inorganics								
Ammonia as N	mg/L	0.97	EPA 350.1	0.040	0.009		08/26/12 10:58	MMF
Ammonium as NH4	mg/L	1.2	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chloride	mg/L	65	EPA 300.0	0.20	0.050		09/06/12 01:26	JAG
Nitrate+Nitrite (N)	mg/L	17	EPA 353.2	0.40	0.10		08/27/12 10:35	MMF
Total Kjeldahl Nitrogen	mg/L	6.2	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 12:26	MMF
Sample Description		TA2-LY-24-C						
Matrix		Groundwater						
SAL Sample Number		1208988-02						
Date/Time Collected		08/20/12 11:10						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 11:50	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chloride	mg/L	69	EPA 300.0	0.20	0.050		08/22/12 00:49	JAG
Nitrate+Nitrite (N)	mg/L	42	EPA 353.2	4.0	1.0		08/21/12 14:05	MMF
Total Kjeldahl Nitrogen	mg/L	3.9	EPA 351.2	0.20	0.05	08/20/12 16:39	08/22/12 13:34	MMF
Sample Description		TA2-LY-12-S						
Matrix		Groundwater						
SAL Sample Number		1208988-03						
Date/Time Collected		08/20/12 11:20						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 11:52	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chloride	mg/L	67	EPA 300.0	0.20	0.050		08/22/12 00:49	JAG
Nitrate+Nitrite (N)	mg/L	38	EPA 353.2	0.79	0.20		08/21/12 13:32	MMF
Total Kjeldahl Nitrogen	mg/L	3.6	EPA 351.2	0.20	0.05	08/20/12 16:39	08/22/12 13:36	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA2-LY-24-S						
Matrix		Groundwater						
SAL Sample Number		1208988-04						
Date/Time Collected		08/20/12 11:30						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 11:54	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chemical Oxygen Demand	mg/L	35	EPA 410.4	25	10	08/22/12 09:30	08/22/12 11:35	CDB
Chloride	mg/L	78	EPA 300.0	0.20	0.050		08/22/12 16:29	JAG
Nitrate+Nitrite (N)	mg/L	50	EPA 353.2	4.0	1.0		08/21/12 14:07	MMF
Phosphorous - Total as P	mg/L	0.36	SM 4500P-E	0.040	0.010	08/21/12 11:40	08/22/12 12:37	MMF
Total Alkalinity	mg/L	32	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	4.2	EPA 351.2	0.20	0.05	08/20/12 16:39	08/22/12 13:37	MMF
Sample Description		TA2-LY-42-S						
Matrix		Groundwater						
SAL Sample Number		1208988-05						
Date/Time Collected		08/20/12 11:40						
Collected by Date/Time Received		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
<u>Inorganics</u>	_							
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 11:56	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chemical Oxygen Demand	mg/L	38	EPA 410.4	25	10	08/22/12 09:30	08/22/12 11:35	CDB
Chloride	mg/L	86	EPA 300.0	0.20	0.050		08/21/12 16:02	JAG
Fluoride	mg/L	0.067	EPA 300.0	0.040	0.010		08/21/12 16:02	JAG
Nitrate (as N)	mg/L	36	EPA 300.0	0.04	0.01		08/21/12 16:02	JAG
Nitrate+Nitrite (N)	mg/L	37	EPA 353.2	4.0	1.0		08/21/12 14:08	MMF
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010	00/04/40 44.40	08/21/12 16:02	JAG
Phosphorous - Total as P	mg/L	0.12	SM 4500P-E EPA 300.0	0.040	0.010	08/21/12 11:40	08/22/12 12:39	MMF
Sulfate Total Alkalinity	mg/L	70	SM 2320B	0.60 8.0	0.20	09/24/42 00:00	08/21/12 16:02	JAG
Total Alkalinity	mg/L	11 2.2	EPA 351.2		2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	2.2	EFA 331.2	0.20	0.05	08/21/12 16:10	08/23/12 10:56	MMF
Inorganic, Dissolved	,,		014 50 405				00/00/40 40 0=	
Dissolved Organic Carbon	mg/L	16	SM 5310B	1.0	0.50		08/28/12 16:37	MEJ
<u>Metals</u>								
Boron	mg/L	0.15	EPA 200.7	0.10	0.050	08/22/12 08:00	08/22/12 18:48	VWC
Calcium	mg/L	45	EPA 200.7	0.50		08/22/12 08:00	08/22/12 18:48	VWC
Iron	mg/L	0.055	EPA 200.7	0.10	0.020	08/22/12 08:00	08/22/12 18:48	VWC
Magnesium	mg/L	15	EPA 200.7	0.50	0.020	08/22/12 08:00	08/22/12 18:48	VWC
Manganese	mg/L	0.0099 1	EPA 200.7	0.010		08/22/12 08:00	08/22/12 18:48	VWC
Potassium	mg/L	11	EPA 200.7	0.050	0.010	08/22/12 08:00	08/22/12 18:48	VWC

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description	7	ΓA2-LY-42-S						
Matrix		Groundwater						
SAL Sample Number Date/Time Collected		1208988-05						
Collected by	-	08/20/12 11:40 Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Sodium	mg/L	88	EPA 200.7	0.50	0.13	08/22/12 08:00	08/22/12 18:48	VWC

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22049 - Digestion f	or TKN by FPA	351.2								
Blank (BH22049-BLK1)					Prepared:	08/20/12 Ar	nalyzed: 08/	/22/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22049-BS1)					Prepared:	08/20/12 Ar	nalyzed: 08/	22/12		
Total Kjeldahl Nitrogen	2.74	0.20	0.05	mg/L	2.5		108	90-110		
Matrix Spike (BH22049-MS1)		Source: 1	209326-07		Prepared:	08/20/12 Ar	nalyzed: 08/	22/12		
Total Kjeldahl Nitrogen	2.99	0.20	0.05	mg/L	2.5	0.460	100	80-120		
Matrix Spike Dup (BH22049-MSI	O1)	Source: 1	209326-07		Prepared:	08/20/12 Ar	nalyzed: 08/	22/12		
Total Kjeldahl Nitrogen	2.98	0.20	0.05	mg/L	2.5	0.460	99	80-120	0.2	20
Batch BH22107 - Ion Chroma	atography 300.0	Prep								
Blank (BH22107-BLK1)					Prepared 8	k Analyzed:	08/21/12			
Fluoride	0.010 U	0.040	0.010	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
LCS (BH22107-BS1)					Prepared 8	k Analyzed:	08/21/12			
Fluoride	0.851	0.040	0.010	mg/L	0.90		95	85-115		
Orthophosphate as P	0.873	0.040	0.010	mg/L	0.90		97	85-115		
Sulfate	8.69	0.60	0.20	mg/L	9.0		97	85-115		
LCS Dup (BH22107-BSD1)					Prepared 8	k Analyzed:	08/21/12			
Fluoride	0.870	0.040	0.010	mg/L	0.90		97	85-115	2	200
Orthophosphate as P	0.962	0.040	0.010	mg/L	0.90		107	85-115	10	200
Sulfate	8.78	0.60	0.20	mg/L	9.0		98	85-115	1	200

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
				O mile	20101	rtocart	701120	Liiiito	111 5	Little
Batch BH22107 - Ion Chroma	tography 300.0	Prep								
Matrix Spike (BH22107-MS1)		Source: 1	209336-01		Prepared 8	k Analyzed:	08/21/12			
Orthophosphate as P	0.948	0.040	0.010	mg/L	0.90	ND	105	85-115		
Sulfate	43.2	0.60	0.20	mg/L	9.0	35.0	91	85-115		
Fluoride	0.839	0.040	0.010	mg/L	0.90	0.0180	91	85-115		
Matrix Spike (BH22107-MS2)		Source: 1	209057-01		Prepared 8	k Analyzed:	08/21/12			
Orthophosphate as P	10.4	0.040	0.010	mg/L	9.0		116	85-115		
Sulfate	83.9	0.60	0.20	mg/L	90	0.774	92	85-115		
Fluoride	9.94	0.040	0.010	mg/L	9.0	0.0695	110	85-115		
Batch BH22108 - Ion Chroma	tography 300.0	Prep								
Blank (BH22108-BLK1)					Prepared 8	k Analyzed:	08/22/12			
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH22108-BS1)					Prepared 8	k Analyzed:	08/22/12			
Chloride	2.71	0.20	0.050	mg/L	3.0		90	85-115		
LCS Dup (BH22108-BSD1)					Prepared 8	Analyzed:	08/22/12			
Chloride	2.71	0.20	0.050	mg/L	3.0		90	85-115	0	200
Matrix Spike (BH22108-MS1)		Source: 1	209192-04		Prepared 8	k Analyzed:	08/22/12			
Chloride	119	0.20	0.050	mg/L	30	89.9	97	80-120		
Matrix Spike (BH22108-MS2)		Source: 1	208988-03		Prepared 8	& Analyzed:	08/22/12			
Chloride	95.7	0.20	0.050	mg/L	30	67.0	96	80-120		
Sulfate	133	0.60	0.20	mg/L	90	50.5	92	85-115		
Fluoride	8.17	0.040	0.010	mg/L	9.0	ND	91	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22109 - Nitrate 353.2	2 by seal									
Blank (BH22109-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22109-BS1)					Prepared 8	k Analyzed:	08/21/12			
Nitrate+Nitrite (N)	0.768	0.04	0.01	mg/L	0.80		96	90-110		
Matrix Spike (BH22109-MS1)		Source: 1	209354-01		Prepared 8	k Analyzed:	08/21/12			
Nitrate+Nitrite (N)	1.92	0.04	0.01	mg/L	1.0	0.888	103	77-119		
Matrix Spike Dup (BH22109-MSD	1)	Source: 1	209354-01		Prepared 8	k Analyzed:	08/21/12			
Nitrate+Nitrite (N)	1.79	0.04	0.01	mg/L	1.0	0.888	90	77-119	7	20
Batch BH22110 - Ammonia by	/ SEAL									
Blank (BH22110-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22110-BS1)					Prepared 8	k Analyzed:	08/21/12			
Ammonia as N	0.52	0.040	0.009	mg/L	0.50		105	90-110		
Matrix Spike (BH22110-MS1)		Source: 1	209326-07		Prepared 8	k Analyzed:	08/21/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	ND	99	90-110		
Batch BH22114 - Digestion fo	r TP by EPA 36	5.2/SM4500	PE							
Blank (BH22114-BLK1)					Prepared: (08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22114 - Digestion for T	P by EPA 36	55.2/SM4500)PE							
LCS (BH22114-BS1)					Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	0.822	0.040	0.010	mg/L	0.80		103	90-110		
Matrix Spike (BH22114-MS1)		Source: 1	209304-02		Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	1.08	0.040	0.010	mg/L	1.0	0.0385	104	75-125		
Matrix Spike Dup (BH22114-MSD1)		Source: 1	209304-02		Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0385	98	75-125	6	25
Batch BH22119 - COD prep										
Blank (BH22119-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH22119-BS1)					Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	47	25	10	mg/L	50		94	90-110		
Matrix Spike (BH22119-MS1)		Source: 1	208997-04		Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	63	25	10	mg/L	50	15	96	85-115		
Matrix Spike Dup (BH22119-MSD1)		Source: 1	208997-04		Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	58	25	10	mg/L	50	15	86	85-115	8	32
Batch BH22136 - alkalinity										
Blank (BH22136-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

Analyta	Result	PQL	MDL	Units	Spike	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte	Result	PQL	IVIDL	Units	Level	Result	%REC	LITTIKS	RPD	LIIIIIL
Batch BH22136 - alkalinity										
Blank (BH22136-BLK2)					Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22136-BS1)					Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
LCS (BH22136-BS2)					Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22136-MS1)		Source: 1	209336-06		Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120		
Matrix Spike (BH22136-MS2)		Source: 1	209336-07		Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	250	8.0	2.0	mg/L	120	140	86	80-120		
Matrix Spike Dup (BH22136-MSD1)		Source: 1	209336-06		Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	0	26
Matrix Spike Dup (BH22136-MSD2)		Source: 1	209336-07		Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	4	26
Batch BH22141 - Digestion for 1	KN by EPA	351.2								
Blank (BH22141-BLK1)					Prepared: (08/21/12 Ar	nalyzed: 08/	23/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22141-BS1)					Prepared: (08/21/12 Ar	nalyzed: 08/	23/12		
Total Kjeldahl Nitrogen	2.41	0.20	0.05	mg/L	2.5		95	90-110		·

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22141 - Digestion fo	or TKN by EPA 3	51.2								
Matrix Spike (BH22141-MS1)		Source: 1	209356-07		Prepared: (08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	3.31	0.20	0.05	mg/L	2.5	0.450	113	80-120		
Matrix Spike Dup (BH22141-MSD	1)	Source: 1	209356-07		Prepared: (08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	2.96	0.20	0.05	mg/L	2.5	0.450	99	80-120	11	20
Batch BH22211 - Ion Chromat	tography 300.0 F	Prep								
Blank (BH22211-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH22211-BS1)					Prepared 8	k Analyzed:	08/22/12			
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115		
Chloride	2.92	0.20	0.050	mg/L	3.0		97	85-115		
LCS Dup (BH22211-BSD1)					Prepared 8	k Analyzed:	08/22/12			
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115	2	200
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	1	200
Matrix Spike (BH22211-MS1)		Source: 1	209369-01		Prepared 8	k Analyzed:	08/22/12			
Chloride	0.050 U,+O	0.20	0.050	mg/L	3.0	ND		80-120		
Nitrate (as N)	2.50	0.04	0.01	mg/L	1.7	0.846	97	85-115		
Matrix Spike (BH22211-MS2)		Source: 1	208997-05		Prepared 8	k Analyzed:	08/22/12			
Nitrate (as N)	31.7	0.04	0.01	mg/L	17	15.0	98	85-115		
Chloride	93.7	0.20	0.050	mg/L	30	63.0	102	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
, mary to	rtodat	1 42		- Crinto	20701	rtooun	701120	Limito		
Batch BH22601 - Ammonia by	/ SEAL									
Blank (BH22601-BLK1)					Prepared 8	Analyzed: (08/26/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22601-BS1)					Prepared 8	Analyzed: (08/26/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		97	90-110		
Matrix Spike (BH22601-MS1)		Source: 1	209380-04		Prepared 8	Analyzed: (08/26/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.032	94	90-110		
Matrix Spike Dup (BH22601-MSD	1)	Source: 1	209380-04		Prepared 8	Analyzed: (08/26/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.032	93	90-110	2	10
Batch BH22701 - Digestion fo	r TKN by EPA	351.2								
Blank (BH22701-BLK1)					Prepared: (08/27/12 An	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22701-BS1)					Prepared: (08/27/12 An	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	2.65	0.20	0.05	mg/L	2.5		105	90-110		
Matrix Spike (BH22701-MS1)		Source: 1	208987-01		Prepared: (08/27/12 An	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	7.94	0.20	0.05	mg/L	2.5	5.56	94	80-120		
Matrix Spike Dup (BH22701-MSD	1)	Source: 1	208987-01		Prepared: (08/27/12 An	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	8.31	0.20	0.05	mg/L	2.5	5.56	108	80-120	4	20
Batch BH22704 - Nitrate 353.2	2 by seal									
Blank (BH22704-BLK1)					Prepared 8	Analyzed: (08/27/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22704 - Nitrate 353.	2 by seal									
LCS (BH22704-BS1)					Prepared 8	k Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.786	0.04	0.01	mg/L	0.80		98	90-110		
Matrix Spike (BH22704-MS1)		Source: '	1209016-21		Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	12.4	0.40	0.10	mg/L	10	2.55	99	77-119		
Matrix Spike Dup (BH22704-MSD	01)	Source: '	1209016-21		Prepared 8	k Analyzed:	08/27/12			
Nitrate+Nitrite (N)	12.7	0.40	0.10	mg/L	10	2.55	102	77-119	2	20
Batch Bl20517 - Ion Chromat	ography 300.0	Prep								
Blank (Bl20517-BLK1)					Prepared 8	& Analyzed:	09/06/12			
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BI20517-BS1)					Prepared 8	k Analyzed:	09/06/12			
Chloride	2.94	0.20	0.050	mg/L	3.0		98	85-115		
LCS Dup (BI20517-BSD1)					Prepared 8	k Analyzed:	09/06/12			
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115	0.3	200
Matrix Spike (BI20517-MS1)		Source: 1	1209988-01		Prepared 8	k Analyzed:	09/06/12			
Chloride	10.3	0.20	0.050	mg/L	3.0	7.03	109	80-120		
Matrix Spike (BI20517-MS2)		Source:	1209712-01		Prepared 8	k Analyzed:	09/06/12			
Chloride	16.8	0.20	0.050	mg/L	3.0	14.0	93	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

Inorganic, Dissolved - Quality Control

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22124 - TOC prep										
Blank (BH22124-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BH22124-BS1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.2	1.0	0.50	mg/L	10		102	90-110		
Matrix Spike (BH22124-MS1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.0	1.0	0.50	mg/L	10	ND	100	85-125		
Matrix Spike Dup (BH22124-MSD1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	9.67	1.0	0.50	mg/L	10	ND	97	85-125	4	25

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22013 - Metals Pre	paration for EPA	Method 20	00.7							
Blank (BH22013-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Potassium	0.086	0.050	0.010	mg/L						
Magnesium	0.020 U	0.50	0.020	mg/L						
ron	0.020 U	0.10	0.020	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Sodium	0.13 U	0.50	0.13	mg/L						
_CS (BH22013-BS1)					Prepared 8	k Analyzed:	08/22/12			
Calcium	20	0.50	0.042	mg/L	20		101	85-115		
ron	8.1	0.10	0.020	mg/L	8.0		101	85-115		
Magnesium	20	0.50	0.020	mg/L	20		101	85-115		
Potassium	20	0.050	0.010	mg/L	20		98	85-115		
Boron	0.43	0.10	0.050	mg/L	0.40		107	85-115		
Sodium	20	0.50	0.13	mg/L	20		98	85-115		
Manganese	0.40	0.010	0.0010	mg/L	0.40		101	85-115		
Matrix Spike (BH22013-MS1)		Source: 1	209308-01		Prepared 8	k Analyzed:	08/22/12			
Sodium	82	0.50	0.13	mg/L	20	61	107	70-130		
Magnesium	29	0.50	0.020	mg/L	20	8.5	101	70-130		
ron	8.7	0.10	0.020	mg/L	8.0	0.56	102	70-130		
Calcium	64	0.50	0.042	mg/L	20	44	103	70-130		
Manganese	0.44	0.010	0.0010	mg/L	0.40	0.035	100	70-130		
Potassium	25	0.050	0.010	mg/L	20	5.3	99	70-130		
Boron	0.52	0.10	0.050	mg/L	0.40	0.12	101	70-130		
Matrix Spike (BH22013-MS2)		Source: 1	209320-01		Prepared 8	k Analyzed:	08/22/12			
Potassium	32	0.050	0.010	mg/L	20	12	102	70-130		
Sodium	53	0.50	0.13	mg/L	20	34	94	70-130		
ron	8.8	0.10	0.020	mg/L	8.0	0.44	104	70-130		
Manganese	0.43	0.010	0.0010	mg/L	0.40	0.011	104	70-130		
Calcium	48	0.50	0.042	mg/L	20	27	105	70-130		
Magnesium	30	0.50	0.020	mg/L	20	9.3	105	70-130		

0.47

0.10

0.050

mg/L

0.40

ND

117

70-130

Boron

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

Metals - Quality Control

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22013 - Metals Pre	paration for EP	A Method 20	0.7							
Matrix Spike Dup (BH22013-MS	SD1)	Source: 1	209308-01		Prepared 8	& Analyzed:	08/22/12			
Boron	0.54	0.10	0.050	mg/L	0.40	0.12	105	70-130	2	30
Manganese	0.45	0.010	0.0010	mg/L	0.40	0.035	103	70-130	3	30
Sodium	83	0.50	0.13	mg/L	20	61	113	70-130	2	30
Calcium	65	0.50	0.042	mg/L	20	44	108	70-130	2	30
Iron	8.9	0.10	0.020	mg/L	8.0	0.56	105	70-130	3	30
Potassium	25	0.050	0.010	mg/L	20	5.3	101	70-130	1	30
Magnesium	29	0.50	0.020	mg/L	20	8.5	103	70-130	1	30
Matrix Spike Dup (BH22013-MS	SD2)	Source: 1	209320-01		Prepared 8	& Analyzed:	08/22/12			
Boron	0.46	0.10	0.050	mg/L	0.40	ND	114	70-130	2	30
Iron	8.6	0.10	0.020	mg/L	8.0	0.44	102	70-130	2	30
Magnesium	30	0.50	0.020	mg/L	20	9.3	103	70-130	1	30
Potassium	32	0.050	0.010	mg/L	20	12	101	70-130	0.2	30
Manganese	0.42	0.010	0.0010	mg/L	0.40	0.011	102	70-130	2	30
Sodium	53	0.50	0.13	mg/L	20	34	93	70-130	0.3	30
Calcium	48	0.50	0.042	mg/L	20	27	105	70-130	0.04	30

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 7, 2012 Work Order: 1208988

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

+O Matrix spike source sample was over the reccommended range for the method.

Finder

SAL Project No. 190898

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYNEW BOULE VARD, OLD SMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name										Cor	Contact / Phone:	j jas						•
	Hazen a	Hazen and Sawyer		ļ	l													
Project Name / Location	. Will also	CADA Test Dadity SE#3	C##3															
Samplers: (Signature)	2000										ì		2					
\	\ \ \						-		PARAN	ETER/C	ONTAINE	PARAMETER / CONTAINER DESCRIPTION	1	-				
Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water	/astewater ye SO-Soil ater O-Other	7						2504 IH4, COD, TP		, F, NO3, OP, 000l	Ид, Мп, К, Иа ИОЗ					Á:	91	tainers (Total
Economic and a second		əte	əwi	XinteA	omposite ds16	20mL P, H	11P, Cool		ILP, Cool CI, Alkalinty ILP, Cool	CI, Alkalinity SO4 250mLaG, C	DOC 250mL P, H B, Ca, Fe, <i>N</i>			00	Hq	Conductivii	Temperatu	No. of Con per each lo
		0.45	=	N &				_	,	:	_			55	508	08h	32.1	
\neg		clanin		\$ 8	()		-	<u> </u>						S'S	19	868 Ja7		y
		3 2		3 3	< >				İ					9.5	ف	905	30.0	4
		. "	3 r	3	4	-		,	-					<u>د</u>	_	936 32.3	8.3	4
04 TA2-LY-24-S		: =	1,20	AS .	×			- ,	-		7			5.9	4.2	839 34,3		3
05 TA2-LY-42-S				S S	×			_		+	┼							
					+									-				
					-													
					-													
														_	_			
Containers Prepared/	Lime	(430 Received.		Z.	Date/Tim		Õ i		Seal intact?			``Z >	(2)					
Sovere	8 1812	1	ا د	S		3	77		Samples int	Samples intact upon arrival?	rival?	Š	 ,					
Relinquished:	Date/lime: /570		1		, S	နှံ	5 P		Received or	Received on ice? Temp_		Ž Ž	¥ *					
Relinquished:		Received:			Date/Time:	l			Proper pres	Proper preservatives indicated?	ndicated?	É	∀ Ž					
Relinquished:	Date/Time.	Received:			Date/Time:				Rec'd within	Rec'd within holding time?	re?	§ (2 Z	₹ (
									Volatiles re	c'd w/out h	Volatiles rec'd w /out headspace?	z - (D					
Relinquished:	Date/Time:	Received:			Date∕Time:	ici			Proper con	Proper containers used?	d?	> NA	N/A					1208988
Chain of Custody, xls Rev. Date 11/19/01												Cha	Chain of Custody	dy				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1208997

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA3-PAN-12-N						
Matrix		Groundwater						
SAL Sample Number		1208997-01						
Date/Time Collected		08/24/12 11:25						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 15:10						
Inorganics								
Ammonia as N	mg/L	0.55	EPA 350.1	0.040	0.009		08/26/12 11:00	MMF
Ammonium as NH4	mg/L	0.71	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chloride	mg/L	29	EPA 300.0	0.20	0.050		09/05/12 01:38	JAG
Nitrate+Nitrite (N)	mg/L	9.7	EPA 353.2	0.40	0.10		08/27/12 10:38	MMF
Total Kjeldahl Nitrogen	mg/L	6.6	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 12:27	MMF
Sample Description		TA3-LY-24-C						
Matrix		Groundwater						
SAL Sample Number		1208997-02						
Date/Time Collected		08/20/12 09:50						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Inorganics								
Ammonia as N	mg/L	0.024	EPA 350.1	0.040	0.009		08/21/12 14:01	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chloride	mg/L	59	EPA 300.0	0.20	0.050		08/22/12 16:29	JAG
Nitrate+Nitrite (N)	mg/L	32	EPA 353.2	0.79	0.20		08/21/12 13:39	MMF
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	08/21/12 16:10	08/23/12 10:58	MMF
Sample Description		TA3-LY-12-S						
Matrix		Groundwater						
SAL Sample Number		1208997-03						
Date/Time Collected		08/20/12 10:00						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.016 I	EPA 350.1	0.040	0.009		08/21/12 14:03	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chemical Oxygen Demand	mg/L	17 I	EPA 410.4	25	10	08/22/12 09:30	08/22/12 11:35	CDB
Chloride	mg/L	61	EPA 300.0	0.20	0.050		08/22/12 16:29	JAG
Nitrate+Nitrite (N)	mg/L	1.5	EPA 353.2	0.04	0.01		08/21/12 12:43	MMF
Phosphorous - Total as P	mg/L	1.8	SM 4500P-E	0.20	0.050	08/21/12 11:40	08/22/12 13:13	MMF
Total Alkalinity	mg/L	110	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	08/21/12 16:10	08/23/12 11:00	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1208997

Laboratory Report

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA3-LY-12-S DUP						
Matrix		Groundwater						
SAL Sample Number		1208997-04						
Date/Time Collected		08/20/12 10:05						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.016 I	EPA 350.1	0.040	0.009		08/21/12 14:05	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005		08/27/12 13:15	ME
Chemical Oxygen Demand	mg/L	15 I	EPA 410.4	25	10	08/22/12 09:30	08/22/12 11:35	CDE
Chloride	mg/L	62	EPA 300.0	0.20	0.050		08/22/12 16:29	JAG
Nitrate+Nitrite (N)	mg/L	1.5	EPA 353.2	0.04	0.01		08/21/12 12:50	MMF
Phosphorous - Total as P	mg/L	1.8	SM 4500P-E	0.20	0.050	08/21/12 11:40	08/22/12 13:14	MMF
Total Alkalinity	mg/L	120	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	0.92	EPA 351.2	0.20	0.05	08/21/12 16:10	08/23/12 11:01	MMF
Sample Description		TA3-LY-24-S						
Matrix		Groundwater						
SAL Sample Number		1208997-05						
Date/Time Collected		08/20/12 10:15						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.019 I	EPA 350.1	0.040	0.009		08/21/12 14:07	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005		08/27/12 13:15	ME
Chemical Oxygen Demand	mg/L	38	EPA 410.4	25	10	08/22/12 09:30	08/22/12 11:35	CDE
Chloride	mg/L	63	EPA 300.0	0.20	0.050		08/22/12 16:29	JAG
Fluoride	mg/L	0.14	EPA 300.0	0.040	0.010		08/21/12 16:02	JAG
Nitrate (as N)	mg/L	15	EPA 300.0	0.04	0.01		08/21/12 16:02	JAG
Nitrate+Nitrite (N)	mg/L	15	EPA 353.2	0.79	0.20		08/21/12 13:44	MMF
Orthophosphate as P	mg/L	0.11	EPA 300.0	0.040	0.010		08/21/12 16:02	JAG
Phosphorous - Total as P	mg/L	0.24	SM 4500P-E	0.040	0.010	08/21/12 11:40	08/22/12 12:42	MMF
Sulfate	mg/L	55	EPA 300.0	0.60	0.20		08/21/12 16:02	JAG
Total Alkalinity	mg/L	22	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	0.97	EPA 351.2	0.20	0.05	08/21/12 16:10	08/23/12 12:12	MMF
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	18	SM 5310B	1.0	0.50		08/28/12 16:37	ME
<u>Metals</u>								
Boron	mg/L	0.15	EPA 200.7	0.10	0.050	08/22/12 08:00	08/22/12 18:51	VWC
Calcium	mg/L	27	EPA 200.7	0.50	0.042		08/22/12 18:51	VWC
Iron	mg/L	0.049 I	EPA 200.7	0.10	0.020	08/22/12 08:00	08/22/12 18:51	VWC
Magnesium	mg/L	12	EPA 200.7	0.50	0.020	08/22/12 08:00	08/22/12 18:51	VWC
Manganese	mg/L	0.0015 I	EPA 200.7	0.010		08/22/12 08:00	08/22/12 18:51	VWC
Potassium	mg/L	2.3	EPA 200.7	0.050	0.010	08/22/12 08:00	08/22/12 18:51	VWC

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1208997

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA3-LY-24-S Groundwater 1208997-05 08/20/12 10:15 Sean Schmidt 08/20/12 15:10						
Sodium	mg/L	54	EPA 200.7	0.50	0.13	08/22/12 08:00	08/22/12 18:51	VWC
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA3-LY-42-S Groundwater 1208997-06 08/20/12 10:30 Sean Schmidt 08/20/12 15:10						
Inorganics Ammonia as N Ammonium as NH4 Chloride Nitrate+Nitrite (N)	mg/L mg/L mg/L mg/L	0.043 0.06 61 9.6	EPA 350.1 EPA 350.1 EPA 300.0 EPA 353.2	0.040 0.01 0.20 0.40	0.009 0.005 0.050 0.10		08/21/12 14:09 08/27/12 13:15 08/23/12 01:16 08/22/12 12:52	MMF MEJ JAG MMF
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	08/21/12 16:10	08/23/12 11:05	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1208997

RPD

%REC

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22107 - Ion Chroma	tography 300.0	Prep								
Blank (BH22107-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Fluoride	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22107-BS1)					Prepared 8	& Analyzed:	08/21/12			
Sulfate	8.69	0.60	0.20	mg/L	9.0		97	85-115		
Fluoride	0.851	0.040	0.010	mg/L	0.90		95	85-115		
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115		
Orthophosphate as P	0.873	0.040	0.010	mg/L	0.90		97	85-115		
LCS Dup (BH22107-BSD1)					Prepared 8	& Analyzed:	08/21/12			
Orthophosphate as P	0.962	0.040	0.010	mg/L	0.90		107	85-115	10	200
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115	1	200
Sulfate	8.78	0.60	0.20	mg/L	9.0		98	85-115	1	200
Fluoride	0.870	0.040	0.010	mg/L	0.90		97	85-115	2	200
Matrix Spike (BH22107-MS1)		Source: 1	209336-01		Prepared 8	& Analyzed:	08/21/12			
Nitrate (as N)	3.10	0.04	0.01	mg/L	1.7	1.40	100	85-115		
Fluoride	0.839	0.040	0.010	mg/L	0.90	0.0180	91	85-115		
Orthophosphate as P	0.948	0.040	0.010	mg/L	0.90	ND	105	85-115		
Sulfate	43.2	0.60	0.20	mg/L	9.0	35.0	91	85-115		
Matrix Spike (BH22107-MS2)		Source: 1	209057-01		Prepared 8	& Analyzed:	08/21/12			
Nitrate (as N)	18.2	0.04	0.01	mg/L	17		107	85-115		
Sulfate	83.9	0.60	0.20	mg/L	90	0.774	92	85-115		
Fluoride	9.94	0.040	0.010	mg/L	9.0	0.0695	110	85-115		
Orthophosphate as P	10.4	0.040	0.010	mg/L	9.0		116	85-115		

Spike

Source

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1208997

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22109 - Nitrate 353.2	by seal									
Blank (BH22109-BLK1)					Prepared 8	k Analyzed:	08/21/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
_CS (BH22109-BS1)					Prepared 8	k Analyzed:	08/21/12			
Nitrate+Nitrite (N)	0.768	0.04	0.01	mg/L	0.80		96	90-110		
Matrix Spike (BH22109-MS1)		Source: 1	209354-01		Prepared 8	k Analyzed:	08/21/12			
Nitrate+Nitrite (N)	1.92	0.04	0.01	mg/L	1.0	0.888	103	77-119		
Matrix Spike Dup (BH22109-MSD1)	Source: 1	209354-01		Prepared 8	& Analyzed:	08/21/12			
Nitrate+Nitrite (N)	1.79	0.04	0.01	mg/L	1.0	0.888	90	77-119	7	20
Batch BH22114 - Digestion for	TP by EPA 36	5.2/SM4500	PE							
Blank (BH22114-BLK1)					Prepared: (08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
_CS (BH22114-BS1)					Prepared: (08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	0.822	0.040	0.010	mg/L	0.80		103	90-110		
Matrix Spike (BH22114-MS1)		Source: 1	209304-02		Prepared: (08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	1.08	0.040	0.010	mg/L	1.0	0.0385	104	75-125		
Matrix Spike Dup (BH22114-MSD1)	Source: 1	209304-02		Prepared: (08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0385	98	75-125	6	25
Batch BH22119 - COD prep										
Blank (BH22119-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	10 U	25	10	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1208997

Analyta	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte	Result	FQL	IVIDE	Ullis	Level	Result	70KEC	LIIIIIIS	KFD	LIIIII
Batch BH22119 - COD prep										
LCS (BH22119-BS1)					Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	47	25	10	mg/L	50		94	90-110		
Matrix Spike (BH22119-MS1)		Source: 1	208997-04		Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	63	25	10	mg/L	50	15	96	85-115		
Matrix Spike Dup (BH22119-MSD1)	Source: 1	208997-04		Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	58	25	10	mg/L	50	15	86	85-115	8	32
Batch BH22122 - Ammonia by	SEAL									
Blank (BH22122-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22122-BS1)					Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.54	0.040	0.009	mg/L	0.50		108	90-110		
Matrix Spike (BH22122-MS1)		Source: 1	209008-01		Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.52	0.040	0.009	mg/L	0.50	ND	104	90-110		
Matrix Spike Dup (BH22122-MSD1	I)	Source: 1	209008-01		Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	103	90-110	2	10
Batch BH22136 - alkalinity										
Blank (BH22136-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 **September 6, 2012 Work Order: 1208997**

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22136 - alkalinity										
Blank (BH22136-BLK2)					Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22136-BS1)					Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
LCS (BH22136-BS2)					Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22136-MS1)		Source: 1	209336-06	i	Prepared 8	& Analyzed: (08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120		
Matrix Spike (BH22136-MS2)		Source: 1	209336-07		Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	250	8.0	2.0	mg/L	120	140	86	80-120		
Matrix Spike Dup (BH22136-MSD1)		Source: 1	209336-06	i	Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	0	26
Matrix Spike Dup (BH22136-MSD2)		Source: 1	209336-07		Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	4	26
Batch BH22141 - Digestion for	TKN by EPA	351.2								
Blank (BH22141-BLK1)					Prepared: (08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22141-BS1)					Prepared: (08/21/12 Ar	alvzed: 08	/23/12		
LC3 (BH22141-B31)					i ropurou.	00/2 // 12 / 11	,			

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1208997

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
	TKN by EDA	254.2								
Batch BH22141 - Digestion for	TKN DY EFA									
Matrix Spike (BH22141-MS1)			209356-07		Prepared:	08/21/12 Ar				
Total Kjeldahl Nitrogen	3.31	0.20	0.05	mg/L	2.5	0.450	113	80-120		
Matrix Spike Dup (BH22141-MSD1)	Source: 1	209356-07		Prepared:	08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	2.96	0.20	0.05	mg/L	2.5	0.450	99	80-120	11	20
Batch BH22207 - Nitrate 353.2	by seal									
Blank (BH22207-BLK1)					Prepared 8	k Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22207-BS1)					Prepared 8	k Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.802	0.04	0.01	mg/L	0.80		100	90-110		
Matrix Spike (BH22207-MS1)		Source: 1	209008-01		Prepared 8	k Analyzed:	08/22/12			
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0281	106	77-119		
Matrix Spike Dup (BH22207-MSD1)	Source: 1	209008-01		Prepared 8	k Analyzed:	08/22/12			
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0281	106	77-119	0.2	20
Batch BH22211 - Ion Chromato	graphy 300.0	Prep								
Blank (BH22211-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Fluoride	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619

September 6, 2012 Work Order: 1208997

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22211 - Ion Chroma	itography 300.0 F	Prep								
LCS (BH22211-BS1)					Prepared 8	& Analyzed:	08/22/12			
Sulfate	8.84	0.60	0.20	mg/L	9.0		98	85-115		
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115		
Orthophosphate as P	0.990	0.040	0.010	mg/L	0.90		110	85-115		
Fluoride	0.908	0.040	0.010	mg/L	0.90		101	85-115		
Chloride	2.92	0.20	0.050	mg/L	3.0		97	85-115		
LCS Dup (BH22211-BSD1)					Prepared 8	& Analyzed:	08/22/12			
Sulfate	8.83	0.60	0.20	mg/L	9.0		98	85-115	0.1	200
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115	2	200
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	1	200
Orthophosphate as P	0.962	0.040	0.010	mg/L	0.90		107	85-115	3	200
Fluoride	0.921	0.040	0.010	mg/L	0.90		102	85-115	1	200
Matrix Spike (BH22211-MS1)		Source: 1	209369-01		Prepared 8	& Analyzed:	08/22/12			
Chloride	0.050 U,+O	0.20	0.050	mg/L	3.0	ND		80-120		
Nitrate (as N)	2.50	0.04	0.01	mg/L	1.7	0.846	97	85-115		
Sulfate	109 +O	0.60	0.20	mg/L	9.0	107	22	85-115		
Fluoride	1.20	0.040	0.010	mg/L	0.90	0.280	102	85-115		
Orthophosphate as P	1.27	0.040	0.010	mg/L	0.90	0.361	101	85-115		
Matrix Spike (BH22211-MS2)		Source: 1	208997-05		Prepared 8	& Analyzed:	08/22/12			
Nitrate (as N)	31.7	0.04	0.01	mg/L	17	14.2	103	85-115		
Fluoride	9.02	0.040	0.010	mg/L	9.0	0.136	99	85-115		
Sulfate	142	0.60	0.20	mg/L	90	52.7	99	85-115		
Chloride	93.7	0.20	0.050	mg/L	30	63.0	102	80-120		
Orthophosphate as P	8.65	0.040	0.010	mg/L	9.0	ND	96	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 **September 6, 2012 Work Order: 1208997**

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22212 - Ion Chromat	ography 300.0	Prep								
Blank (BH22212-BLK1)					Prepared 8	k Analyzed:	08/23/12			
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH22212-BS1)					Prepared 8	k Analyzed:	08/23/12			
Chloride	2.89	0.20	0.050	mg/L	3.0		96	85-115		
LCS Dup (BH22212-BSD1)					Prepared 8	k Analyzed:	08/23/12			
Chloride	2.88	0.20	0.050	mg/L	3.0		96	85-115	0.3	200
Matrix Spike (BH22212-MS1)		Source: 1	209013-04		Prepared 8	k Analyzed:	08/23/12			
Chloride	16.5	0.20	0.050	mg/L	3.0	13.5	100	80-120		
Matrix Spike (BH22212-MS2)		Source: 1	209013-17		Prepared 8	k Analyzed:	08/23/12			
Chloride	17.8	0.20	0.050	mg/L	3.0	15.1	90	80-120		
Batch BH22601 - Ammonia by	SEAL									
Blank (BH22601-BLK1)					Prepared 8	k Analyzed:	08/26/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22601-BS1)					Prepared 8	& Analyzed:	08/26/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		97	90-110		
Matrix Spike (BH22601-MS1)		Source: 1	209380-04		Prepared 8	k Analyzed:	08/26/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.032	94	90-110		
Matrix Spike Dup (BH22601-MSD1	1)	Source: 1	209380-04		Prepared 8	k Analyzed:	08/26/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.032	93	90-110	2	10

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1208997

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22701 - Digestion fo	r TKN by EPA	351.2								
Blank (BH22701-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22701-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	2.65	0.20	0.05	mg/L	2.5		105	90-110		
Matrix Spike (BH22701-MS1)		Source: 1	208987-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	7.94	0.20	0.05	mg/L	2.5	5.56	94	80-120		
Matrix Spike Dup (BH22701-MSD	1)	Source: 1	208987-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	8.31	0.20	0.05	mg/L	2.5	5.56	108	80-120	4	20
Batch BH22704 - Nitrate 353.2	2 by seal									
Blank (BH22704-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22704-BS1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.786	0.04	0.01	mg/L	0.80		98	90-110		
Matrix Spike (BH22704-MS1)		Source: 1	209016-21		Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	12.4	0.40	0.10	mg/L	10	2.55	99	77-119		
Matrix Spike Dup (BH22704-MSD	1)	Source: 1	209016-21		Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	12.7	0.40	0.10	mg/L	10	2.55	102	77-119	2	20
Batch Bl20423 - Ion Chromato	ography 300.0	Prep								
Blank (Bl20423-BLK1)					Prepared 8	& Analyzed:	09/05/12			
Chloride	0.050 U	0.20	0.050	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1208997

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch Bl20423 - Ion Chromat	ography 300.0	Prep								
LCS (BI20423-BS1)					Prepared 8	& Analyzed:	09/05/12			
Chloride	3.07	0.20	0.050	mg/L	3.0		102	85-115		
LCS Dup (Bl20423-BSD1)					Prepared 8	& Analyzed:	09/05/12			
Chloride	3.06	0.20	0.050	mg/L	3.0		102	85-115	0.3	200
Matrix Spike (Bl20423-MS1)		Source: 1	209002-01		Prepared 8	& Analyzed:	09/05/12			
Chloride	27.9	0.20	0.050	mg/L	3.0	24.6	110	80-120		
Matrix Spike (Bl20423-MS2)		Source: 1	209636-05		Prepared 8	& Analyzed:	09/05/12			
Chloride	23.3	0.20	0.050	mg/L	6.0	16.1	120	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 **September 6, 2012 Work Order: 1208997**

Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Batch BH22124 - TOC prep										
Blank (BH22124-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BH22124-BS1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.2	1.0	0.50	mg/L	10		102	90-110		
Matrix Spike (BH22124-MS1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.0	1.0	0.50	mg/L	10	ND	100	85-125		
Matrix Spike Dup (BH22124-MSD1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	9.67	1.0	0.50	mg/L	10	ND	97	85-125	4	25

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1208997

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22013 - Metals Prep	aration for EPA	Method 20	00.7							
Blank (BH22013-BLK1)					Prepared 8	Analyzed:	08/22/12			
Boron	0.050 U	0.10	0.050	mg/L						
Magnesium	0.020 U	0.50	0.020	mg/L						
Potassium	0.086	0.050	0.010	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Sodium	0.13 U	0.50	0.13	mg/L						
LCS (BH22013-BS1)					Prepared 8	Analyzed:	08/22/12			
Sodium	20	0.50	0.13	mg/L	20		98	85-115		
Calcium	20	0.50	0.042	mg/L	20		101	85-115		
Iron	8.1	0.10	0.020	mg/L	8.0		101	85-115		
Potassium	20	0.050	0.010	mg/L	20		98	85-115		
Magnesium	20	0.50	0.020	mg/L	20		101	85-115		
Manganese	0.40	0.010	0.0010	mg/L	0.40		101	85-115		
Boron	0.43	0.10	0.050	mg/L	0.40		107	85-115		
Matrix Spike (BH22013-MS1)		Source: 1	209308-01		Prepared 8	Analyzed:	08/22/12			
Boron	0.52	0.10	0.050	mg/L	0.40	0.12	101	70-130		
Potassium	25	0.050	0.010	mg/L	20	5.3	99	70-130		
Magnesium	29	0.50	0.020	mg/L	20	8.5	101	70-130		
Iron	8.7	0.10	0.020	mg/L	8.0	0.56	102	70-130		
Calcium	64	0.50	0.042	mg/L	20	44	103	70-130		
Manganese	0.44	0.010	0.0010	mg/L	0.40	0.035	100	70-130		
Sodium	82	0.50	0.13	mg/L	20	61	107	70-130		
Matrix Spike (BH22013-MS2)		Source: 1	209320-01		Prepared 8	Analyzed:	08/22/12			
Calcium	48	0.50	0.042	mg/L	20	27	105	70-130		
Iron	8.8	0.10	0.020	mg/L	8.0	0.44	104	70-130		
Boron	0.47	0.10	0.050	mg/L	0.40	ND	117	70-130		
Potassium	32	0.050	0.010	mg/L	20	12	102	70-130		
Sodium	53	0.50	0.13	mg/L	20	34	94	70-130		
Manganese	0.43	0.010	0.0010	mg/L	0.40	0.011	104	70-130		
Magnesium			0.020	_		9.3		70-130		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1208997

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22013 - Metals Pr Matrix Spike Dup (BH22013-M	•		1209308-01		Prepared 8	& Analyzed:	08/22/12			
Boron	0.54	0.10	0.050	mg/L	0.40	0.12	105	70-130	2	30
Calcium	65	0.50	0.042	mg/L	20	44	108	70-130	2	30
Iron	8.9	0.10	0.020	mg/L	8.0	0.56	105	70-130	3	30
Potassium	25	0.050	0.010	mg/L	20	5.3	101	70-130	1	30
Magnesium	29	0.50	0.020	mg/L	20	8.5	103	70-130	1	30
Manganese	0.45	0.010	0.0010	mg/L	0.40	0.035	103	70-130	3	30
Sodium	83	0.50	0.13	mg/L	20	61	113	70-130	2	30
Matrix Spike Dup (BH22013-M	SD2)	Source:	1209320-01		Prepared 8	& Analyzed:	08/22/12			
Boron	0.46	0.10	0.050	mg/L	0.40	ND	114	70-130	2	30
Calcium	48	0.50	0.042	mg/L	20	27	105	70-130	0.04	30
Iron	8.6	0.10	0.020	mg/L	8.0	0.44	102	70-130	2	30
Potassium	32	0.050	0.010	mg/L	20	12	101	70-130	0.2	30
Magnesium	30	0.50	0.020	mg/L	20	9.3	103	70-130	1	30
Sodium	53	0.50	0.13	mg/L	20	34	93	70-130	0.3	30
Manganese	0.42	0.010	0.0010	mg/L	0.40	0.011	102	70-130	2	30

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1208997

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

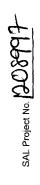
A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

+O Matrix spike source sample was over the reccommended range for the method.

Finder



110 BAYWEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name											100	10 / to otro							
	Hazer	Hazen and Sawyer	e									5							
Project Name / Location																			
(2)	S&GV	S&GW Test Facility SE#2	ity SE#2		}														
Samplers: (Signature)		13	J						۵	DADAMETED	700	NONTAINED DESCRIPTION	JESCOBE	NOIL					
Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil	-Wastewater idge SO-Soil							9T ,0		,90 ,		εN ,							lsto
GW-Groundwater SA-Saline Water O-Other R-Reagent Water	Water O-Other ter	 -				1H [*] 2O [*]				E' NO ³	100								
Sample Description	aription		əmiT	xintsM	Composite Grab	1KN' NO×' N 1EN' NO×' N	CI 115' COO!	250mL P, H ₂ . 1KN, NOx, N	ILP, Cool Cl, Alkalinity	ILP, Cool Cl, Alkalinity, SO₄	250mLaG, C.	250mL P, HN 3, Ca, Fe, Mg					H Conductivity	remperature	Vo. of Contai
01 TA3-PAN-12-N		व कर छ	18	GW			Ĺ			,					2	1.0	160	13	
02 TA3-LY-24-C		n/oc/8	8/20/14 6950	GW	×	-	-				<u> </u>				-	Т	1	3 29.)	7
03 TA3-LY-12-S		21/00/8	400	GW	_×			1	-								626	28.	7
04 TA3-LY-12-S - DUP		8 00/m	1005	GW	×			1	-							7.0 P.1		187 7	
05 TA3-LY-24-S		8/20/W 1015	1015	GW	×			7		_	-	1			9		Γ	49 29.4	4
06 TA3-LY-42-S		Profer	0501 m/m/s	GW	×	-	-										\Box	4 20.(2
		.			-											+	-	\dashv	
					\dashv											\dashv		-	
																		_	
					-												-	_	
					-											+	+	+	_
Containers Prepared/ Relinquished	Date/Time: (930	Received	X	1	Date/Time:	101	36		Seal intact?	45			Z ≻	3		-	-	_	
Relinquished:	Date/Time:	Received	7	>	Date/Time	9	1		Samples	Samples intact upon arrival?	arrival?		Ç)					ì
4-2	\sim 0		(·	Š	_ Ý	6 6 6 9		Received	Received on ice? Temp	P	1)Ę	Ž					
Relinquished:	Date/Time:	Received:			Date/Time	j _{oj}			Proper pr	Proper preservatives indicated?	indicated	2	Š €	¥					
Relinquished:	Date/Time:	Received:		<u> </u>	Date/Time:	à			Rec'd with	Rec'd within holding time?	ime?		§€)©	≨ €					
Relinquished:	Date/Time:	Received:		<u> </u>	Date/Time:	io			Volatiles I	Volatiles rec'd w/out headspace? Proper containers used?	headspa ed?	;ee;							
Chain of Cretody de			}		Ì								,						1208997
Rev.Date 11/19/01													Cha	Chain of Custody	tody				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209002

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA4-PAN-12-N						
Matrix		Groundwater						
SAL Sample Number		1209002-01						
Date/Time Collected		08/10/12 00:00-08/24	4/12 10:25					
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 15:10						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.39	EPA 350.1	0.040	0.009		08/26/12 11:02	MMF
Ammonium as NH4	mg/L	0.50	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chloride	mg/L	25	EPA 300.0	0.20	0.050		09/05/12 01:38	JAG
Nitrate+Nitrite (N)	mg/L	6.0	EPA 353.2	0.40	0.10		08/27/12 10:40	MMF
Total Kjeldahl Nitrogen	mg/L	5.7	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 12:28	MMF
Sample Description		TA4-LY-24-C						
Matrix		Groundwater						
SAL Sample Number		1209002-02						
Date/Time Collected		08/20/12 12:00						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 15:09	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chemical Oxygen Demand	mg/L	38	EPA 410.4	25	10	08/22/12 09:30	08/22/12 11:35	CDB
Chloride	mg/L	71	EPA 300.0	0.20	0.050		08/23/12 01:16	JAG
Nitrate+Nitrite (N)	mg/L	28	EPA 353.2	4.0	1.0		08/22/12 13:57	MMF
Phosphorous - Total as P	mg/L	0.22	SM 4500P-E	0.040	0.010	08/21/12 11:40	08/22/12 12:44	MMF
Total Alkalinity	mg/L	65	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	2.2	EPA 351.2	0.20	0.05	08/21/12 16:10	08/23/12 11:06	MMF
Sample Description		TA4-LY-12-S						
Matrix		Groundwater						
SAL Sample Number		1209002-03						
Date/Time Collected		08/20/12 12:10						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.020	EPA 350.1	0.040	0.009		08/21/12 15:36	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chemical Oxygen Demand	mg/L	22 I	EPA 410.4	25	10	08/21/12 12:10	08/21/12 13:20	CDB
Chloride	mg/L	72	EPA 300.0	0.20	0.050		08/21/12 16:02	JAG
Fluoride	mg/L	0.38	EPA 300.0	0.040	0.010		08/21/12 16:02	JAG
Nitrate (as N)	mg/L	23	EPA 300.0	0.04	0.01		08/21/12 16:02	JAG
Nitrate+Nitrite (N)	mg/L	34	EPA 353.2	4.0	1.0		08/22/12 13:59	MMF

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209002

Laboratory Report

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number		TA4-LY-12-S Groundwater 1209002-03						
Date/Time Collected		08/20/12 12:10						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Orthophosphate as P	mg/L	5.7	EPA 300.0	0.040	0.010		08/21/12 16:02	JAG
Phosphorous - Total as P	mg/L	6.3	SM 4500P-E	0.20	0.050	08/21/12 11:40	08/22/12 13:14	MMF
Sulfate	mg/L	54	EPA 300.0	0.60	0.20		08/21/12 16:02	JAG
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	08/21/12 16:10	08/23/12 12:13	MMF
Inorganic, Dissolved		44	CM 5240D	1.0	0.50		00/00/40 40:07	N 4 🗆 1
Dissolved Organic Carbon	mg/L	11	SM 5310B	1.0	0.50		08/28/12 16:37	MEJ
<u>Metals</u>	_							
Boron	mg/L	0.14	EPA 200.7	0.10	0.050	08/23/12 08:00	08/23/12 15:28	VWC
Calcium	mg/L	45	EPA 200.7	0.50	0.042	08/23/12 08:00	08/23/12 15:28	VWC
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	08/23/12 08:00	08/23/12 15:28	VWC
Magnesium	mg/L	14	EPA 200.7	0.50	0.020	08/23/12 08:00	08/23/12 15:28	VWC
Manganese	mg/L	0.0012 I	EPA 200.7	0.010		08/23/12 08:00	08/23/12 15:28	VWC
Potassium	mg/L	5.5	EPA 200.7	0.050	0.010	08/23/12 08:00	08/23/12 15:28	VWC
Sodium	mg/L	56	EPA 200.7	0.50	0.13	08/23/12 08:00	08/23/12 15:28	VWC
Sample Description		TA4-LY-12-S DUP						
Matrix		Groundwater						
SAL Sample Number		1209002-04						
Date/Time Collected		08/20/12 12:15						
Collected by Date/Time Received		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.025 I	EPA 350.1	0.040	0.009		08/21/12 15:38	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chemical Oxygen Demand	mg/L	24 1	EPA 410.4	25	10	08/21/12 12:10	08/21/12 13:20	CDB
Chloride	mg/L	72	EPA 300.0	0.20	0.050		08/21/12 16:02	JAG
Fluoride	mg/L	0.40	EPA 300.0	0.040	0.010		08/21/12 16:02	JAG
Nitrate (as N)	mg/L	23	EPA 300.0	0.04	0.01		08/21/12 16:02	JAG
Nitrate+Nitrite (N)	mg/L	30	EPA 353.2	4.0	1.0		08/22/12 14:01	MMF
Orthophosphate as P	mg/L	6.0	EPA 300.0	0.040	0.010		08/21/12 16:02	JAG
Phosphorous - Total as P	mg/L	6.3	SM 4500P-E	0.20	0.050	08/21/12 11:40	08/22/12 13:15	MMF
Sulfate	mg/L	55	EPA 300.0	0.60	0.20		08/21/12 16:02	JAG
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	08/21/12 16:10	08/23/12 11:10	MMF
Inorganic, Dissolved		44	SM 5210P	1.0	0.50		00/00/40 46:07	N4E 1
Dissolved Organic Carbon	mg/L	11	SM 5310B	1.0	0.50		08/28/12 16:37	MEJ
Metals			ED4			00/00/45 55 65	00/00// 5 / 5 / 5 /	
Boron	mg/L	0.14	EPA 200.7	0.10	0.050	08/23/12 08:00	08/23/12 15:31	VWC
Calcium	mg/L	44	EPA 200.7	0.50	0.042	08/23/12 08:00	08/23/12 15:31	VWC

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209002

Laboratory Report

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA4-LY-12-S DUP						
Matrix		Groundwater						
SAL Sample Number		1209002-04						
Date/Time Collected		08/20/12 12:15						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	08/23/12 08:00	08/23/12 15:31	VWC
Magnesium	mg/L	15	EPA 200.7	0.50	0.020	08/23/12 08:00	08/23/12 15:31	VWC
Manganese	mg/L	0.0010 U	EPA 200.7	0.010	0.0010	08/23/12 08:00	08/23/12 15:31	VWC
Potassium	mg/L	5.3	EPA 200.7	0.050	0.010	08/23/12 08:00	08/23/12 15:31	VWC
Sodium	mg/L	56	EPA 200.7	0.50	0.13	08/23/12 08:00	08/23/12 15:31	VWC
Sample Description		TA4-LY-24-S						
Matrix		Groundwater						
SAL Sample Number		1209002-05						
Date/Time Collected		08/20/12 12:40						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.050	EPA 350.1	0.040	0.009		08/21/12 15:14	MMF
Ammonium as NH4	mg/L	0.06	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chloride	mg/L	61	EPA 300.0	0.20	0.050		08/23/12 01:16	JAG
Nitrate+Nitrite (N)	mg/L	45	EPA 353.2	4.0	1.0		08/22/12 14:03	MMF
Total Kjeldahl Nitrogen	mg/L	3.5	EPA 351.2	0.20	0.05	08/21/12 16:10	08/23/12 11:11	MMF
Sample Description		TA4-LY-42-S						
Matrix		Groundwater						
SAL Sample Number		1209002-06						
Date/Time Collected		08/20/12 12:50						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 15:16	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chloride	mg/L	89	EPA 300.0	0.20	0.050		08/23/12 01:16	JAG
Nitrate+Nitrite (N)	mg/L	35	EPA 353.2	4.0	1.0		08/22/12 14:06	MMF
Total Kjeldahl Nitrogen	mg/L	3.2	EPA 351.2	0.20	0.05	08/21/12 16:10	08/23/12 11:16	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209002

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22107 - Ion Chroma	tography 300.0	Prep								
Blank (BH22107-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Fluoride	0.010 U	0.040	0.010	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
LCS (BH22107-BS1)					Prepared 8	& Analyzed:	08/21/12			
Sulfate	8.69	0.60	0.20	mg/L	9.0		97	85-115		
Fluoride	0.851	0.040	0.010	mg/L	0.90		95	85-115		
Orthophosphate as P	0.873	0.040	0.010	mg/L	0.90		97	85-115		
LCS Dup (BH22107-BSD1)					Prepared 8	& Analyzed:	08/21/12			
Sulfate	8.78	0.60	0.20	mg/L	9.0		98	85-115	1	200
Orthophosphate as P	0.962	0.040	0.010	mg/L	0.90		107	85-115	10	200
Fluoride	0.870	0.040	0.010	mg/L	0.90		97	85-115	2	200
Matrix Spike (BH22107-MS1)		Source: 1	209336-01		Prepared 8	& Analyzed:	08/21/12			
Sulfate	43.2	0.60	0.20	mg/L	9.0	35.0	91	85-115		
Fluoride	0.839	0.040	0.010	mg/L	0.90	0.0180	91	85-115		
Orthophosphate as P	0.948	0.040	0.010	mg/L	0.90	ND	105	85-115		
Matrix Spike (BH22107-MS2)		Source: 1	209057-01		Prepared 8	& Analyzed:	08/21/12			
Sulfate	83.9	0.60	0.20	mg/L	90	0.774	92	85-115		
Orthophosphate as P	10.4	0.040	0.010	mg/L	9.0		116	85-115		
Fluoride	9.94	0.040	0.010	mg/L	9.0	0.0695	110	85-115		
Batch BH22114 - Digestion for	or TP by EPA 36	5.2/SM4500	PE							
Blank (BH22114-BLK1)	•				Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L	-		-			

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209002

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22114 - Digestion for T	P by EPA 36	55.2/SM4500)PE							
LCS (BH22114-BS1)					Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	0.822	0.040	0.010	mg/L	0.80		103	90-110		
Matrix Spike (BH22114-MS1)		Source: 1	209304-02		Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	1.08	0.040	0.010	mg/L	1.0	0.0385	104	75-125		
Matrix Spike Dup (BH22114-MSD1)		Source: 1	209304-02		Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0385	98	75-125	6	25
Batch BH22118 - COD prep										
Blank (BH22118-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH22118-BS1)					Prepared 8	& Analyzed:	08/21/12			
Chemical Oxygen Demand	47	25	10	mg/L	50		94	90-110		
Matrix Spike (BH22118-MS1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/21/12			
Chemical Oxygen Demand	47	25	10	mg/L	50	ND	94	85-115		
Matrix Spike Dup (BH22118-MSD1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/21/12			
Chemical Oxygen Demand	49	25	10	mg/L	50	ND	98	85-115	4	32
Batch BH22119 - COD prep										
Blank (BH22119-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	10 U	25	10	mg/L			<u> </u>		<u> </u>	<u> </u>

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209002

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22119 - COD prep										
LCS (BH22119-BS1)					Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	47	25	10	mg/L	50		94	90-110		
Matrix Spike (BH22119-MS1)		Source: 1	208997-04		Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	63	25	10	mg/L	50	15	96	85-115		
Matrix Spike Dup (BH22119-MSD1	1)	Source: 1	208997-04		Prepared 8	& Analyzed:	08/22/12			
Chemical Oxygen Demand	58	25	10	mg/L	50	15	86	85-115	8	32
Batch BH22122 - Ammonia by	SEAL									
Blank (BH22122-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22122-BS1)					Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.54	0.040	0.009	mg/L	0.50		108	90-110		
Matrix Spike (BH22122-MS1)		Source: 1	209008-01		Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.52	0.040	0.009	mg/L	0.50	ND	104	90-110		
Matrix Spike Dup (BH22122-MSD	1)	Source: 1	209008-01		Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	103	90-110	2	10
Batch BH22136 - alkalinity										
Blank (BH22136-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L		<u> </u>	<u> </u>		<u> </u>	

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209002

Analyta	Result	PQL	MDL	Units	Spike	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte	Result	PQL	IVIDL	Units	Level	Result	%REC	LIIIIIIS	RPD	LIIIIIL
Batch BH22136 - alkalinity										
Blank (BH22136-BLK2)					Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22136-BS1)					Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
LCS (BH22136-BS2)					Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22136-MS1)		Source: 1	209336-06		Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120		
Matrix Spike (BH22136-MS2)		Source: 1	209336-07		Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	250	8.0	2.0	mg/L	120	140	86	80-120		
Matrix Spike Dup (BH22136-MSD1)		Source: 1	209336-06		Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	0	26
Matrix Spike Dup (BH22136-MSD2)		Source: 1	209336-07		Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	4	26
Batch BH22141 - Digestion for 1	TKN by EPA 3	351.2								
Blank (BH22141-BLK1)					Prepared:	08/21/12 Ar	nalyzed: 08/	/23/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22141-BS1)					Prepared:	08/21/12 Ar	nalyzed: 08/	/23/12		
Total Kjeldahl Nitrogen	2.41	0.20	0.05	mg/L	2.5		95	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209002

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22141 - Digestion f	or TKN by EPA	351.2								
Matrix Spike (BH22141-MS1)		Source: 1	209356-07		Prepared:	08/21/12 Ar	nalyzed: 08/	/23/12		
Total Kjeldahl Nitrogen	3.31	0.20	0.05	mg/L	2.5	0.450	113	80-120		
Matrix Spike Dup (BH22141-MSI	D1)	Source: 1	209356-07		Prepared:	08/21/12 Ar	nalyzed: 08/	/23/12		
Total Kjeldahl Nitrogen	2.96	0.20	0.05	mg/L	2.5	0.450	99	80-120	11	20
Batch BH22207 - Nitrate 353	.2 by seal									
Blank (BH22207-BLK1)					Prepared 8	k Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22207-BS1)					Prepared 8	k Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.802	0.04	0.01	mg/L	0.80		100	90-110		
Matrix Spike (BH22207-MS1)		Source: 1	209008-01		Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0281	106	77-119		
Matrix Spike Dup (BH22207-MSI	D1)	Source: 1	209008-01		Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0281	106	77-119	0.2	20
Batch BH22211 - Ion Chroma	atography 300.0	Prep								
Blank (BH22211-BLK1)					Prepared 8	k Analyzed:	08/22/12			
Chloride	0.050 U	0.20	0.050	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22211-BS1)					Prepared 8	& Analyzed:	08/22/12			
Chloride	2.92	0.20	0.050	mg/L	3.0		97	85-115		
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209002

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22211 - Ion Chromat	tography 300.0 F	rep								
LCS Dup (BH22211-BSD1)					Prepared 8	k Analyzed:	08/22/12			
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	1	200
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115	2	200
Matrix Spike (BH22211-MS1)		Source: 1	209369-01		Prepared 8	k Analyzed:	08/22/12			
Nitrate (as N)	2.50	0.04	0.01	mg/L	1.7	0.846	97	85-115		
Chloride	0.050 U,+O	0.20	0.050	mg/L	3.0	ND		80-120		
Matrix Spike (BH22211-MS2)		Source: 1	208997-05		Prepared 8	k Analyzed:	08/22/12			
Nitrate (as N)	31.7	0.04	0.01	mg/L	17	15.0	98	85-115		
Chloride	93.7	0.20	0.050	mg/L	30	63.0	102	80-120		
Batch BH22212 - Ion Chroma	tography 300.0 F	Prep								
Blank (BH22212-BLK1)					Prepared 8	k Analyzed:	08/23/12			
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH22212-BS1)					Prepared 8	& Analyzed:	08/23/12			
Chloride	2.89	0.20	0.050	mg/L	3.0		96	85-115		
LCS Dup (BH22212-BSD1)					Prepared 8	k Analyzed:	08/23/12			
Chloride	2.88	0.20	0.050	mg/L	3.0		96	85-115	0.3	200
Matrix Spike (BH22212-MS1)		Source: 1	209013-04		Prepared 8	k Analyzed:	08/23/12			
Chloride	16.5	0.20	0.050	mg/L	3.0	13.5	100	80-120		
Matrix Spike (BH22212-MS2)		Source: 1	209013-17		Prepared 8	k Analyzed:	08/23/12			
Chloride	17.8	0.20	0.050	mg/L	3.0	15.1	90	80-120		
Chionae	17.0	0.20	0.030	my/L	3.0	13.1	90	30-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209002

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
, and yes	rtodit	1 42		- Crinto	20701	rtocart	701120	Liiiito		
Batch BH22601 - Ammonia by	/ SEAL									
Blank (BH22601-BLK1)					Prepared 8	k Analyzed:	08/26/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22601-BS1)					Prepared 8	k Analyzed:	08/26/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		97	90-110		
Matrix Spike (BH22601-MS1)		Source: 1	209380-04		Prepared 8	k Analyzed:	08/26/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.032	94	90-110		
Matrix Spike Dup (BH22601-MSD	1)	Source: 1	209380-04		Prepared 8	& Analyzed:	08/26/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.032	93	90-110	2	10
Batch BH22701 - Digestion fo	r TKN by EPA	351.2								
Blank (BH22701-BLK1)					Prepared: (08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22701-BS1)					Prepared: (08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	2.65	0.20	0.05	mg/L	2.5		105	90-110		
Matrix Spike (BH22701-MS1)		Source: 1	208987-01		Prepared: (08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	7.94	0.20	0.05	mg/L	2.5	5.56	94	80-120		
Matrix Spike Dup (BH22701-MSD	1)	Source: 1	208987-01		Prepared: (08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	8.31	0.20	0.05	mg/L	2.5	5.56	108	80-120	4	20
Batch BH22704 - Nitrate 353.2	2 by seal									
Blank (BH22704-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209002

Desuit	DOI	MDI	11-24-	Spike	Source	0/ DEO	%REC	DDD	RPD
Result	PQL	IVIDL	Units	Level	Result	%REC	Limits	RPD	Limit
2 by seal									
				Prepared 8	Analyzed:	08/27/12			
0.786	0.04	0.01	mg/L	0.80		98	90-110		
	Source: 1	209016-21		Prepared 8	Analyzed:	08/27/12			
12.4	0.40	0.10	mg/L	10	2.55	99	77-119		
1)	Source: 1	209016-21		Prepared 8	Analyzed:	08/27/12			
12.7	0.40	0.10	mg/L	10	2.55	102	77-119	2	20
ography 300.0	Prep								
				Prepared 8	Analyzed:	09/05/12			
0.050 U	0.20	0.050	mg/L						
				Prepared 8	Analyzed:	09/05/12			
3.07	0.20	0.050	mg/L	3.0		102	85-115		
				Prepared 8	Analyzed:	09/05/12			
3.06	0.20	0.050	mg/L	3.0	· · · · · · · · · · · · · · · · · · ·	102	85-115	0.3	200
3.06		0.050 209002-01	mg/L	3.0	Analyzed:		85-115	0.3	200
3.06 27.9			mg/L	3.0			85-115 80-120	0.3	200
	Source: 1	209002-01		3.0 Prepared 8	Analyzed:	09/05/12		0.3	200
27.9	9.20 0.60	209002-01 0.050	mg/L	3.0 Prepared 8 3.0 9.0	Analyzed:	09/05/12 110 101	80-120	0.3	200
•	0.786 12.4 11) 12.7 ography 300.0	2 by seal 0.786 0.04 Source: 1 12.4 0.40 11) Source: 1 12.7 0.40 ography 300.0 Prep 0.050 U 0.20	2 by seal 0.786	2 by seal 0.786	Result PQL MDL Units Level	Result PQL MDL Units Level Result	Result PQL MDL Units Level Result %REC 2 by seal Prepared & Analyzed: 08/27/12 0.786 0.04 0.01 mg/L 0.80 98 Source: 1209016-21 Prepared & Analyzed: 08/27/12 12.4 0.40 0.10 mg/L 10 2.55 99 11) Source: 1209016-21 Prepared & Analyzed: 08/27/12 12.7 0.40 0.10 mg/L 10 2.55 102 Ography 300.0 Prep Prepared & Analyzed: 09/05/12 0.050 U 0.20 0.050 mg/L Prepared & Analyzed: 09/05/12	Result PQL MDL Units Level Result %REC Limits	Result PQL MDL Units Level Result %REC Limits RPD 2 by seal Prepared & Analyzed: 08/27/12 0.786

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209002

Inorganic, Dissolved - Quality Control

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22124 - TOC prep										
Blank (BH22124-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BH22124-BS1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.2	1.0	0.50	mg/L	10		102	90-110		
Matrix Spike (BH22124-MS1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.0	1.0	0.50	mg/L	10	ND	100	85-125		
Matrix Spike Dup (BH22124-MSD1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	9.67	1.0	0.50	mg/L	10	ND	97	85-125	4	25

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209002

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22014 - Metals Prep	paration for EPA	Method 20	00.7							
Blank (BH22014-BLK1)					Prepared 8	& Analyzed:	08/23/12			
Magnesium	0.038 I	0.50	0.020	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
Potassium	0.010 U	0.050	0.010	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Sodium	0.13 U	0.50	0.13	mg/L						
LCS (BH22014-BS1)					Prepared 8	& Analyzed:	08/23/12			
Calcium	20	0.50	0.042	mg/L	20		98	85-115		
Iron	7.9	0.10	0.020	mg/L	8.0		98	85-115		
Magnesium	20	0.50	0.020	mg/L	20		100	85-115		
Potassium	20	0.050	0.010	mg/L	20		101	85-115		
Boron	0.40	0.10	0.050	mg/L	0.40		99	85-115		
Sodium	23	0.50	0.13	mg/L	20		114	85-115		
Manganese	0.39	0.010	0.0010	mg/L	0.40		97	85-115		
Matrix Spike (BH22014-MS1)		Source: 1	209312-01		Prepared 8	k Analyzed:	08/23/12			
Sodium	28	0.50	0.13	mg/L	20	6.5	106	70-130		
Magnesium	22	0.50	0.020	mg/L	20	1.9	99	70-130		
Boron	0.41	0.10	0.050	mg/L	0.40	ND	101	70-130		
Calcium	100	0.50	0.042	mg/L	20	85	84	70-130		
Potassium	21	0.050	0.010	mg/L	20	0.35	102	70-130		
Manganese	0.39	0.010	0.0010	mg/L	0.40	ND	98	70-130		
Iron	8.0	0.10	0.020	mg/L	8.0	ND	100	70-130		
Matrix Spike (BH22014-MS2)		Source: 1	209313-01		Prepared 8	k Analyzed:	08/23/12			
Boron	0.47	0.10	0.050	mg/L	0.40	0.072	100	70-130		
Calcium	130	0.50	0.042	mg/L	20	110	90	70-130		
Sodium	81	0.50	0.13	mg/L	20	60	105	70-130		
Magnesium	23	0.50	0.020	mg/L	20	3.0	98	70-130		
Manganese	0.39	0.010	0.0010	mg/L	0.40	ND	98	70-130		
Potassium	27	0.050	0.010	mg/L	20	6.5	100	70-130		
Iron	7.8	0.10	0.020	mg/L	8.0	0.13	96	70-130		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209002

Metals - Quality Control

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22014 - Metals Prepa	ration for EP	A Method 20	00.7							
Matrix Spike Dup (BH22014-MSD1)	Source: 1	209312-01		Prepared 8	k Analyzed:	08/23/12			
Sodium	27	0.50	0.13	mg/L	20	6.5	104	70-130	2	30
Iron	7.9	0.10	0.020	mg/L	8.0	ND	99	70-130	0.9	30
Magnesium	22	0.50	0.020	mg/L	20	1.9	100	70-130	1	30
Calcium	100	0.50	0.042	mg/L	20	85	79	70-130	1	30
Potassium	20	0.050	0.010	mg/L	20	0.35	100	70-130	2	30
Manganese	0.39	0.010	0.0010	mg/L	0.40	ND	98	70-130	0.3	30
Boron	0.42	0.10	0.050	mg/L	0.40	ND	104	70-130	3	30
Matrix Spike Dup (BH22014-MSD2)	Source: 1	1209313-01		Prepared 8	k Analyzed:	08/23/12			
Manganese	0.40	0.010	0.0010	mg/L	0.40	ND	99	70-130	0.6	30
Magnesium	23	0.50	0.020	mg/L	20	3.0	100	70-130	1	30
Potassium	27	0.050	0.010	mg/L	20	6.5	104	70-130	3	30
Calcium	130	0.50	0.042	mg/L	20	110	92	70-130	0.2	30
Sodium	81	0.50	0.13	mg/L	20	60	105	70-130	0.02	30
Iron	8.1	0.10	0.020	mg/L	8.0	0.13	99	70-130	3	30
Boron	0.47	0.10	0.050	mg/L	0.40	0.072	100	70-130	0.6	30

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 **September 6, 2012 Work Order: 1209002**

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

+O Matrix spike source sample was over the reccommended range for the method.

Finder

SAL Project No. 12 © 9002

SOUTHERN ANALYTICAL LABORATORIES, INC. 110BAYVIEW BOULEVARD, OLDSWAR, FL. 34677 8134855-1844 fax 8134855-2218

Client Name											Contact / Phone:	Phone:							
Desired Money (1 conf. or	Hazen	Hazen and Sawyer			ļ			}											
riojectivanie / Location	S&GW	S&GW Test Facility SE#2	y SE#2							_									
Samplers: (Signature)		1	1		 				PAR	PARAMETER / CONTAINER DESCRIPTION	CONTA	INER DE	SCRIPTI	NO			l		
Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water	ater Soil									F, NO ₃ , OP,	loc	O ₃ I, Mn, K, Na							
Sample Description		Date	əmiT	xintsM	Composite Grab	Σ20Ш Ъ' Н ^Σ 6	1LP, Cool Cl	Z20WL P, H ₂ 9	1LP, Cool Cl, Alkalinity	1LP, Cool Cl, Alkalinity, SO ₄	DOC SeomlaG, Co	250mL P, HN B, Ca, Fe, Mg	·	 	00	Hq	Conductivity	Temperature	No. of Contai
01 TA4-PAN-12-N		C) HE-80	Sc. 0	86W	×		-	-			-	-			0	6	188	23.7	
		71/0e/s	00:21 71/0e/s	NS OW	×			-	-		-				J. →	6.6		744 32,3	2
03 TA4-LY-12-S	 	_	0/:7)	ΝS	×			-		-	-	-			٨/٩	4.9	27.25 Ex	35.2	3
04 TA4-LY-12-S DUP			21:21	ΝĐ	×			-		-	-	-			6.4	6.4	十%	35,2	2
05 TA4-LY-24-S			94:XI	ΝS	×	-	-								2,5	5.1	724	33.5	7
06 TA4-LY-42-S		>	05:71	ΝS	×	-	-								5,5	٦, ٩	808	₹'%	4
																-	,		
											_								
					\vdash									-	-	-	_		
											1	1	1	+	\dashv	-			
					4			7	-					+	+	-	_		
	Date/Time: 1954	Receiged		1	Date/Time:	0,0	900	+			7		7		_	4			
Months	8/12		6	13	0	` `	7		Seal intact?	2:	9		z > (<u> </u>					
Relinquished:	0 \$2017	Received:	1	<u> </u>	Date/Time:	ω			Samples	Samples Intact upon arrival of the samples intact upon arrival of the samples on ice? Temp	Trivali?								
Relinquished: Date/Time:	ne.	Received		1	Date/Time;		1910		Proper pre	Proper preservatives indicated?	ndicated?		ء ف						
Reinquished: Date/Time.	me;	Received:	}		Cate/Time			\top	Rec'd with Volatiles r	Rec'd within halding time? Volatiles rec'd w/out headspace?	ne? eadspace	ć.	½ (2) z z ⊗ ≻	 ≰ <i>C</i> \$\					
Relinquished: Date/Time.	ле:	Received:			Date/Time				Proper co	Proper containers used?	c _b		Z Z			ļ		`	1209002
Chain of Custody yas Rev, Date 11/1901													Chain	Chain of Custody	i in				

Page 16 of 16

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

Project Name		S&GW Test I	acility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA1-PZ-11-EF2						
Matrix		Groundwater						
SAL Sample Number		1209013-01						
Date/Time Collected		08/20/12 08:15						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Field Parameters								
рН	SU	4.2	DEP FT1100	0.1	0.1		08/20/12 08:15	SAS
Water Temperature	°C	27.0	DEP FT1400	0.1	0.1		08/20/12 08:15	SAS
Specific conductance	umhos/cm	324	DEP FT1200	0.1	0.1		08/20/12 08:15	SAS
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		08/20/12 08:15	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 14:35	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/28/12 09:40	MEJ
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/21/12 12:10	08/21/12 13:20	CDB
Chloride	mg/L	24	EPA 300.0	0.20	0.050		08/21/12 16:02	JAG
Fluoride	mg/L	0.054	EPA 300.0	0.040	0.010		08/21/12 16:02	JAG
Nitrate (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		08/21/12 16:02	JAG
Nitrate+Nitrite (N)	mg/L	11	EPA 353.2	0.40	0.10		08/22/12 13:10	MMF
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		08/21/12 16:02	JAG
Phosphorous - Total as P	mg/L	0.067	SM 4500P-E	0.040	0.010	08/21/12 11:40	08/22/12 12:52	MMF
Sulfate	mg/L	56	EPA 300.0	0.60	0.20		08/21/12 16:02	JAG
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 13:36	MMF
Total Organic Carbon	mg/L	2.1	SM 5310B	1.0	0.50		08/26/12 11:11	MEJ
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	2.0	SM 5310B	1.0	0.50		08/28/12 16:37	MEJ
<u>Metals</u>								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	08/23/12 08:00	08/23/12 15:35	VWC
Calcium	mg/L	23	EPA 200.7	0.50	0.042	08/23/12 08:00	08/23/12 15:35	VWC
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	08/23/12 08:00	08/23/12 15:35	VWC
Magnesium	mg/L	5.5	EPA 200.7	0.50	0.020	08/23/12 08:00	08/23/12 15:35	VWC
Manganese	mg/L	0.022	EPA 200.7	0.010	0.0010	08/23/12 08:00	08/23/12 15:35	VWC
Potassium	mg/L	9.4	EPA 200.7	0.050	0.010	08/23/12 08:00	08/23/12 15:35	VWC
Sodium	mg/L	16	EPA 200.7	0.50	0.13	08/23/12 08:00	08/23/12 15:35	VWC
Sample Description		TA1-PZ-11-EF2 DUP						
Matrix		Groundwater						
SAL Sample Number		1209013-02						
Date/Time Collected		08/20/12 08:20						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Field Parameters								
pH	SU	4.2	DEP FT1100	0.1	0.1		08/20/12 08:20	SAS

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

Project Name		S&GW Test I	acility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA1-PZ-11-EF2 DUP						
Matrix		Groundwater						
SAL Sample Number		1209013-02						
Date/Time Collected		08/20/12 08:20						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Water Temperature	°C	27.0	DEP FT1400	0.1	0.1		08/20/12 08:20	SAS
Specific conductance	umhos/cm	324	DEP FT1200	0.1	0.1		08/20/12 08:20	SAS
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		08/20/12 08:20	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 14:37	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/28/12 09:40	ME
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/21/12 12:10	08/21/12 13:20	CDE
Chloride	mg/L	23	EPA 300.0	0.20	0.050		08/21/12 16:02	JAC
Fluoride	mg/L	0.071	EPA 300.0	0.040	0.010		08/21/12 16:02	JAC
Nitrate (as N)	mg/L	9.9	EPA 300.0	0.04	0.01		08/21/12 16:02	JAC
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	0.40	0.10		08/22/12 13:13	MMF
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		08/21/12 16:02	JAC
Phosphorous - Total as P	mg/L	0.071	SM 4500P-E	0.040	0.010	08/21/12 11:40	08/22/12 12:53	MMF
Sulfate	mg/L	52	EPA 300.0	0.60	0.20		08/21/12 16:02	JAC
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	0.99	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 15:08	MMF
Total Organic Carbon	mg/L	2.5	SM 5310B	1.0	0.50		08/26/12 11:11	ME
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	2.0	SM 5310B	1.0	0.50		08/28/12 16:37	ME
<u>Metals</u>								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	08/23/12 08:00	08/23/12 15:38	VWC
Calcium	mg/L	22	EPA 200.7	0.50	0.042	08/23/12 08:00	08/23/12 15:38	VWC
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	08/23/12 08:00	08/23/12 15:38	VWC
Magnesium	mg/L	5.3	EPA 200.7	0.50	0.020	08/23/12 08:00	08/23/12 15:38	VWC
Manganese	mg/L	0.021	EPA 200.7	0.010	0.0010		08/23/12 15:38	VWC
Potassium	mg/L	9.0	EPA 200.7	0.050	0.010	08/23/12 08:00	08/23/12 15:38	VWC
Sodium	mg/L	15	EPA 200.7	0.50	0.13	08/23/12 08:00	08/23/12 15:38	VWC
Sample Description		TA1-PZ-11-J4						
Matrix		Groundwater						
SAL Sample Number		1209013-03						
Date/Time Collected		08/20/12 12:25						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Field Parameters								
pH	SU	4.5	DEP FT1100	0.1	0.1		08/20/12 12:25	SAS
Water Temperature	°C	27.9	DEP FT1400	0.1	0.1		08/20/12 12:25	SAS
Specific conductance	umhos/cm	236	DEP FT1200	0.1	0.1		08/20/12 12:25	SAS

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description	Т	A1-PZ-11-J4						
Matrix	G	Groundwater						
SAL Sample Number	1	209013-03						
Date/Time Collected	0	8/20/12 12:25						
Collected by	S	ean Schmidt						
Date/Time Received	C	8/20/12 15:10						
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/20/12 12:25	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 14:39	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/28/12 09:40	MEJ
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/21/12 12:10	08/21/12 13:20	CDB
Chloride	mg/L	16	EPA 300.0	0.20	0.050		08/23/12 01:16	JAG
Nitrate+Nitrite (N)	mg/L	7.4	EPA 353.2	0.40	0.10		08/22/12 13:15	MMF
Phosphorous - Total as P	mg/L	0.11	SM 4500P-E	0.040	0.010	08/21/12 11:40	08/22/12 12:54	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 13:40	MMF
Sample Description	T	A1-PZ-11-K4						
Matrix	G	Groundwater						
SAL Sample Number	1	209013-04						
Date/Time Collected	0	8/20/12 12:41						
Collected by	S	Sean Schmidt						
Date/Time Received	C	8/20/12 15:10						
Field Parameters								
рН	SU	4.3	DEP FT1100	0.1	0.1		08/20/12 12:41	SAS
Water Temperature	°C	27.4	DEP FT1400	0.1	0.1		08/20/12 12:41	SAS
Specific conductance	umhos/cm	244	DEP FT1200	0.1	0.1		08/20/12 12:41	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/20/12 12:41	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 14:40	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/28/12 09:40	MEJ
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/21/12 12:10	08/21/12 13:20	CDB
Chloride	mg/L	14	EPA 300.0	0.20	0.050		08/23/12 01:16	JAG
Nitrate+Nitrite (N)	mg/L	6.8	EPA 353.2	0.40	0.10		08/22/12 13:17	MMF
Phosphorous - Total as P	mg/L	0.060	SM 4500P-E	0.040	0.010	08/21/12 11:40	08/22/12 12:55	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 13:41	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected		TA1-PZ-11-L2 Groundwater 1209013-05 08/20/12 11:48						
Collected by Date/Time Received		Sean Schmidt 08/20/12 15:10						
Field Parameters								
pH	SU	4.2	DEP FT1100	0.1	0.1		08/20/12 11:48	SAS
Water Temperature	°C	27.7	DEP FT1400	0.1	0.1		08/20/12 11:48	SAS
Specific conductance	umhos/cm	782	DEP FT1200	0.1	0.1		08/20/12 11:48	SAS
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		08/20/12 11:48	SAS
Inorganics								
Ammonia as N	mg/L	0.011 I	EPA 350.1	0.040	0.009		08/21/12 14:42	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005		08/28/12 09:40	MEJ
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/21/12 12:10	08/21/12 13:20	CDB
Chloride	mg/L	95	EPA 300.0	0.20	0.050	00/21/12 12:10	08/21/12 16:02	JAG
Fluoride	mg/L	0.047	EPA 300.0	0.040	0.010		08/21/12 16:02	JAG
Nitrate (as N)	mg/L	40	EPA 300.0	0.04	0.01		08/21/12 16:02	JAG
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		08/21/12 16:02	JAG
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		08/21/12 16:02	JAG
Phosphorous - Total as P	mg/L	0.26	SM 4500P-E	0.040	0.010	08/21/12 11:40	08/22/12 12:56	MMF
Sulfate	mg/L	41	EPA 300.0	0.60	0.20	00/21/12 11:10	08/21/12 16:02	JAG
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	3.8	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 13:43	MMF
Total Organic Carbon	mg/L	4.2	SM 5310B	1.0	0.50	00/21/12 10110	08/26/12 11:11	MEJ
Nitrate+Nitrite (N)	mg/L	40	EPA 300.0	0.08	0.02		08/21/12 16:02	JAG
Inorganic, Dissolved	3							
Dissolved Organic Carbon	mg/L	2.8	SM 5310B	1.0	0.50		08/28/12 16:37	MEJ
<u>Metals</u>								
Boron	mg/L	0.082 I	EPA 200.7	0.10	0.050	08/23/12 08:00	08/23/12 15:42	VWC
Calcium	mg/L	46	EPA 200.7	0.50	0.042	08/23/12 08:00	08/23/12 15:42	VWC
Iron	mg/L	0.036 I	EPA 200.7	0.10	0.020	08/23/12 08:00	08/23/12 15:42	VWC
Magnesium	mg/L	21	EPA 200.7	0.50	0.020	08/23/12 08:00	08/23/12 15:42	VWC
Manganese	mg/L	0.020	EPA 200.7	0.010	0.0010	08/23/12 08:00	08/23/12 15:42	VWC
Potassium	mg/L	5.2	EPA 200.7	0.050	0.010	08/23/12 08:00	08/23/12 15:42	VWC
Sodium	mg/L	56	EPA 200.7	0.50	0.13	08/23/12 08:00	08/23/12 15:42	VWC
Commis Decembris		TA1-PZ-11-L3						
Sample Description Matrix								
SAL Sample Number		Groundwater 1209013-06						
Date/Time Collected		08/20/12 12:07						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
233711110110001100		00/20/12 10.10						

Field Parameters

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA1-PZ-11-L3						
Matrix		Groundwater						
SAL Sample Number		1209013-06						
Date/Time Collected		08/20/12 12:07						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
рН	SU	4.5	DEP FT1100	0.1	0.1		08/20/12 12:07	SAS
Water Temperature	°C	27.7	DEP FT1400	0.1	0.1		08/20/12 12:07	SAS
Specific conductance	umhos/cm	332	DEP FT1200	0.1	0.1		08/20/12 12:07	SAS
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		08/20/12 12:07	SAS
Inorganics		0.000 11	EDA 250.4	0.040	0.000		00/00/40 44.54	N 4 N 4 F
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/23/12 11:54	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	00/04/40 40:40	08/28/12 09:40	ME
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/21/12 12:10	08/21/12 13:20	CDE
Chloride	mg/L	27	EPA 300.0	0.20	0.050		08/23/12 01:16	JAC
Nitrate+Nitrite (N)	mg/L	13	EPA 353.2	0.40	0.10	00/01/10 11 10	08/22/12 13:22	MMF
Phosphorous - Total as P	mg/L	0.10	SM 4500P-E	0.040	0.010	08/21/12 11:42	08/22/12 13:57	MMF
Total Alkalinity	mg/L	2.1	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 13:45	MMF
Sample Description		TA1-PZ-11-L4						
Matrix		Groundwater						
SAL Sample Number		1209013-07						
Date/Time Collected		08/23/12 10:40						
Collected by		Josephine Edeback	-Hirst					
Date/Time Received		08/23/12 13:00						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/23/12 14:50	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDE
Chloride	mg/L	14	EPA 300.0	0.20	0.050		08/27/12 16:47	JAC
Nitrate+Nitrite (N)	mg/L	7.9	EPA 353.2	0.40	0.10		08/24/12 12:44	MMF
Phosphorous - Total as P	mg/L	0.026 I	SM 4500P-E	0.040	0.010	08/24/12 11:50	08/27/12 12:07	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/25/12 10:00	08/27/12 09:11	AES
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 11:45	MMF
Sample Description		TA1-PZ-11-L4 DUP						
Matrix		Groundwater						
SAL Sample Number		1209013-08						
Date/Time Collected		08/23/12 10:45						
Collected by		Josephine Edeback	-Hirst					
Date/Time Received		08/23/12 13:00						
Inorganics								
	mg/L	0.009 U					08/23/12 14:52	

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		ΓΑ1-PZ-11-L4 DUP						
Matrix	(Groundwater						
SAL Sample Number	•	1209013-08						
Date/Time Collected		08/23/12 10:45						
Collected by	•	Josephine Edeback-	Hirst					
Date/Time Received	1	08/23/12 13:00						
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDE
Chloride	mg/L	14	EPA 300.0	0.20	0.050		08/27/12 16:47	JAG
Nitrate+Nitrite (N)	mg/L	7.7	EPA 353.2	0.40	0.10		08/24/12 12:46	MMF
Phosphorous - Total as P	mg/L	0.014 I	SM 4500P-E	0.040	0.010	08/24/12 11:50	08/27/12 12:09	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/25/12 10:00	08/27/12 09:11	AES
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 11:47	MMF
Sample Description	-	ΓΑ1-PZ-11-L5						
Matrix		Groundwater						
SAL Sample Number		1209013-09						
Date/Time Collected		08/20/12 12:58						
Collected by		Sean Schmidt						
Date/Time Received	1	08/20/12 15:10						
Field Parameters								
pH	SU	4.4	DEP FT1100	0.1	0.1		08/20/12 12:58	SAS
Water Temperature	°C	27.5	DEP FT1400	0.1	0.1		08/20/12 12:58	SAS
Specific conductance	umhos/cm	275	DEP FT1200	0.1	0.1		08/20/12 12:58	SAS
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		08/20/12 12:58	SAS
Inorganics	9.=	0.0		•	· · ·		00/20/ 12 12:00	0, 10
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/23/12 11:56	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.040	0.005		08/28/12 09:40	MEJ
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/21/12 12:10	08/21/12 13:20	CDE
Chloride	mg/L	15	EPA 300.0	0.20	0.050	00/21/12 12:10	08/23/12 01:16	JAG
Nitrate+Nitrite (N)	mg/L	10	EPA 353.2	0.40	0.10		08/22/12 13:24	MMF
Phosphorous - Total as P	mg/L	0.045	SM 4500P-E	0.040	0.010	08/21/12 11:42	08/22/12 13:58	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 13:50	MMF
Occupie December:		TA4 DZ 00 NO						
Sample Description		TA1-PZ-09-N3						
Matrix		Groundwater						
SAL Sample Number Date/Time Collected		1209013-10						
Collected by		08/20/12 11:13 Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Field Parameters								
pH	SU	6.5	DEP FT1100	0.1	0.1		08/20/12 11:13	SAS
•	°C		DEP FT1100 DEP FT1400	0.1				
Water Temperature	C	28.2	DEF F1 1400	0.1	0.1		08/20/12 11:13	SAS

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

Laboratory Report

Project Name		S&GW Tes	st Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA1-PZ-09-N3						
Matrix		Groundwater						
SAL Sample Number		1209013-10						
Date/Time Collected		08/20/12 11:13						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Specific conductance	umhos/cm	635	DEP FT1200	0.1	0.1		08/20/12 11:13	SAS
Dissolved Oxygen	mg/L	1.1	DEP FT1500	0.1	0.1		08/20/12 11:13	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.060	EPA 350.1	0.040	0.009		08/23/12 11:58	MMF
Ammonium as NH4	mg/L	0.08	EPA 350.1	0.01	0.005		08/28/12 09:40	MEJ
Chloride	mg/L	30	EPA 300.0	0.20	0.050		08/23/12 01:16	JAG
Nitrate+Nitrite (N)	mg/L	17	EPA 353.2	0.40	0.10		08/22/12 13:25	MMF
Total Kjeldahl Nitrogen	mg/L	3.1	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 13:52	MMF
Sample Description		TA1-PZ-16-N3						
Matrix		Groundwater						
SAL Sample Number		1209013-11						
Date/Time Collected		08/20/12 11:30						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Field Parameters								
рН	SU	5.0	DEP FT1100	0.1	0.1		08/20/12 11:30	SAS
Water Temperature	°C	26.4	DEP FT1400	0.1	0.1		08/20/12 11:30	SAS
Specific conductance	umhos/cm	280	DEP FT1200	0.1	0.1		08/20/12 11:30	SAS
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		08/20/12 11:30	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.016 I	EPA 350.1	0.040	0.009		08/23/12 12:00	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005		08/28/12 09:40	MEJ
Chloride	mg/L	15	EPA 300.0	0.20	0.050		08/23/12 01:16	JAG
Nitrate+Nitrite (N)	mg/L	8.3	EPA 353.2	0.40	0.10		08/22/12 13:26	MMF
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 13:53	MMF
Sample Description		TA1-PZ-09-O7						
Matrix		Groundwater						
SAL Sample Number		1209013-12						
Date/Time Collected		08/20/12 10:22						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Field Parameters								
pH	SU	5.4	DEP FT1100	0.1	0.1		08/20/12 10:22	SAS
•	°C	27.6	DEP FT1400	0.1	0.1		08/20/12 10:22	SAS
Water Temperature	0							

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description	1	TA1-PZ-09-O7						
Matrix	(Groundwater						
SAL Sample Number	1	209013-12						
Date/Time Collected	C	08/20/12 10:22						
Collected by	\$	Sean Schmidt						
Date/Time Received	(08/20/12 15:10						
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		08/20/12 10:22	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.032 I	EPA 350.1	0.040	0.009		08/23/12 12:02	MMF
Ammonium as NH4	mg/L	0.04	EPA 350.1	0.01	0.005		08/28/12 09:40	MEJ
Chemical Oxygen Demand	mg/L	33	EPA 410.4	25	10	08/21/12 12:10	08/21/12 13:20	CDB
Chloride	mg/L	21	EPA 300.0	0.20	0.050		08/23/12 01:16	JAG
Nitrate+Nitrite (N)	mg/L	9.7	EPA 353.2	0.40	0.10		08/22/12 15:41	MMF
Phosphorous - Total as P	mg/L	2.6	SM 4500P-E	0.20	0.050	08/21/12 11:42	08/22/12 15:32	MMF
Total Alkalinity	mg/L	12	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 13:55	MMF
Sample Description	1	TA1-PZ-16-07						
Matrix	(Groundwater						
SAL Sample Number	1	1209013-13						
Date/Time Collected	C	08/20/12 10:43						
Collected by	\$	Sean Schmidt						
Date/Time Received	(08/20/12 15:10						
Field Parameters								
pH	SU	5.0	DEP FT1100	0.1	0.1		08/20/12 10:43	SAS
Water Temperature	°C	26.5	DEP FT1400	0.1	0.1		08/20/12 10:43	SAS
Specific conductance	umhos/cm	302	DEP FT1200	0.1	0.1		08/20/12 10:43	SAS
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		08/20/12 10:43	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.012 I	EPA 350.1	0.040	0.009		08/23/12 12:04	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chemical Oxygen Demand	mg/L	13 I	EPA 410.4	25	10	08/21/12 12:10	08/21/12 13:20	CDB
Chloride	mg/L	14	EPA 300.0	0.20	0.050		08/23/12 01:16	JAG
Nitrate+Nitrite (N)	mg/L	9.6	EPA 353.2	0.40	0.10		08/22/12 15:43	MMF
Phosphorous - Total as P	mg/L	1.9	SM 4500P-E	0.040	0.010	08/21/12 11:42	08/22/12 14:01	MMF
Total Alkalinity	mg/L	6.3 I	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 13:57	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA1-PZ-09-M9						
Matrix		Groundwater						
SAL Sample Number		1209013-14						
Date/Time Collected		08/20/12 09:38						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Field Parameters								
рН	SU	5.4	DEP FT1100	0.1	0.1		08/20/12 09:38	SA
Water Temperature	°C	27.1	DEP FT1400	0.1	0.1		08/20/12 09:38	SA
Specific conductance	umhos/cm	233	DEP FT1200	0.1	0.1		08/20/12 09:38	SAS
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		08/20/12 09:38	SAS
Inorganics	,,	0.004	EDA 250 4	0.040	0.000		00/00/40 40 00	
Ammonia as N	mg/L	0.021 I	EPA 350.1	0.040	0.009		08/23/12 12:06	MMI
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005		08/27/12 13:15	ME
Chloride	mg/L	13	EPA 300.0	0.20	0.050		08/23/12 01:16	JAC
Nitrate+Nitrite (N)	mg/L	5.6	EPA 353.2 EPA 351.2	0.40	0.10	00/04/40 40:40	08/22/12 15:45	MMI
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 13:58	MMI
Sample Description		TA1-PZ-16-M9						
Matrix		Groundwater						
SAL Sample Number		1209013-15						
Date/Time Collected		08/20/12 09:54						
Collected by Date/Time Received		Sean Schmidt						
Date/Time Neceived		08/20/12 15:10						
Field Parameters								
рН	SU	4.9	DEP FT1100	0.1	0.1		08/20/12 09:54	SAS
Water Temperature	°C	26.4	DEP FT1400	0.1	0.1		08/20/12 09:54	SAS
Specific conductance	umhos/cm	298	DEP FT1200	0.1	0.1		08/20/12 09:54	SAS
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		08/20/12 09:54	SAS
<u>Inorganics</u> Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/23/12 12:08	MMI
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.040	0.005		08/27/12 13:15	ME
Chloride	-	16	EPA 300.0	0.20	0.050		08/23/12 01:16	JAC
Nitrate+Nitrite (N)	mg/L mg/L	11	EPA 353.2	0.40	0.030		08/22/12 15:48	MMI
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 14:00	MMI
Total Tycldam Tvitrogen	mg/L	1.0	2171001.2	0.20	0.00	00/21/12 10:10	00/23/12 14.00	IVIIVII
Sample Description		TA1-PZ-09-I7						
Matrix		Groundwater						
SAL Sample Number		1209013-16						
Date/Time Collected Collected by		08/20/12 08:56 Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Field Parameters								

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA1-PZ-09-I7						
Matrix		Groundwater						
SAL Sample Number		1209013-16						
Date/Time Collected		08/20/12 08:56						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
рН	SU	5.5	DEP FT1100	0.1	0.1		08/20/12 08:56	SAS
Water Temperature	°C	27.0	DEP FT1400	0.1	0.1		08/20/12 08:56	SAS
Specific conductance	umhos/cm	264	DEP FT1200	0.1	0.1		08/20/12 08:56	SAS
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		08/20/12 08:56	SAS
Inorganics								
Ammonia as N	mg/L	0.026 I	EPA 350.1	0.040	0.009		08/23/12 12:10	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005		08/27/12 13:15	ME
Chloride	mg/L	13	EPA 300.0	0.20	0.050		08/23/12 01:16	JAC
Nitrate+Nitrite (N)	mg/L	6.0	EPA 353.2	0.40	0.10		08/22/12 15:50	MMF
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 14:02	MMF
Sample Description		TA1-PZ-16-I7						
Matrix		Groundwater						
SAL Sample Number		1209013-17						
Date/Time Collected		08/20/12 09:11						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Field Parameters								
pH	SU	5.0	DEP FT1100	0.1	0.1		08/20/12 09:11	SAS
Water Temperature	°C	26.4	DEP FT1400	0.1	0.1		08/20/12 09:11	SAS
Specific conductance	umhos/cm	291	DEP FT1200	0.1	0.1		08/20/12 09:11	SAS
Dissolved Oxygen	mg/L	0.9	DEP FT1500	0.1	0.1		08/20/12 09:11	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/23/12 12:12	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005		08/27/12 13:15	ME
Chloride	mg/L	15	EPA 300.0	0.20	0.050		08/23/12 01:16	JAC
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	0.40	0.10		08/22/12 15:52	MMF
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 14:03	MMF
Sample Description		TA1-PZ-09-RS16						
Matrix		Groundwater						
SAL Sample Number		1209013-18						
Date/Time Collected		08/21/12 07:36						
Collected by		Sean Schmidt						
Date/Time Received		08/21/12 14:40						
Field Parameters								
pH	SU	5.7	DEP FT1100	0.1	0.1		08/21/12 07:36	SAS

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

Laboratory Report

Project Name		S&GW Test	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA1-PZ-09-RS16						
Matrix		Groundwater						
SAL Sample Number		1209013-18						
Date/Time Collected		08/21/12 07:36						
Collected by		Sean Schmidt						
Date/Time Received		08/21/12 14:40						
Water Temperature	°C	25.8	DEP FT1400	0.1	0.1		08/21/12 07:36	SAS
Specific conductance	umhos/cm	304	DEP FT1200	0.1	0.1		08/21/12 07:36	SAS
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		08/21/12 07:36	SAS
Inorganics		0.40	EDA 250 4	0.040	0.000		00/00/40 40:40	N 4N 4E
Ammonia as N	mg/L	0.13	EPA 350.1	0.040	0.009		08/23/12 12:19	MMF
Ammonium as NH4	mg/L	0.16 7.2	EPA 350.1 EPA 300.0	0.01 0.20	0.005 0.050		08/27/12 13:15	MEJ
Chloride Nitrate+Nitrite (N)	mg/L	7.2 5.6	EPA 353.2	0.20	0.050		08/24/12 01:42 08/22/12 15:54	JAG MMF
Total Kjeldahl Nitrogen	mg/L mg/L	4.4	EPA 353.2	0.40	0.10	08/21/12 16:13	08/23/12 14:05	MMF
Total Neldani Nitrogen	mg/L	7.7	2177001.2	0.20	0.03	00/21/12 10:13	00/23/12 14.03	IVIIVII
Sample Description		TA1-PZ-16-RS16						
Matrix		Groundwater						
SAL Sample Number		1209013-19						
Date/Time Collected		08/21/12 07:56						
Collected by Date/Time Received		Sean Schmidt						
Date/Time Received		08/21/12 14:40						
Field Parameters								
pH	SU	5.1	DEP FT1100	0.1	0.1		08/21/12 07:56	SAS
Water Temperature	°C	25.6	DEP FT1400	0.1	0.1		08/21/12 07:56	SAS
Specific conductance	umhos/cm	296	DEP FT1200	0.1	0.1		08/21/12 07:56	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/21/12 07:56	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.023 I	EPA 350.1	0.040	0.009		08/23/12 12:21	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chloride	mg/L	14	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG
Nitrate+Nitrite (N)	mg/L	8.4	EPA 353.2	0.40	0.10	00/04/40 40:40	08/22/12 15:57	MMF
Total Kjeldahl Nitrogen	mg/L	2.4	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 14:17	MMF
Sample Description		TA1-PZ-09-RS18						
Matrix		Groundwater						
SAL Sample Number		1209013-20						
Date/Time Collected		08/21/12 08:14						
Collected by		Sean Schmidt						
Date/Time Received		08/21/12 14:40						
Field Parameters								
рН	SU	5.5	DEP FT1100	0.1	0.1		08/21/12 08:14	SAS
Water Temperature	°C	26.6	DEP FT1400	0.1	0.1		08/21/12 08:14	SAS

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

Project Name S&GW Test Facility SE#2											
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву			
Sample Description		TA1-PZ-09-RS18									
Matrix		Groundwater									
SAL Sample Number		1209013-20									
Date/Time Collected		08/21/12 08:14									
Collected by		Sean Schmidt									
Date/Time Received		08/21/12 14:40									
Specific conductance	umhos/cm	363	DEP FT1200	0.1	0.1		08/21/12 08:14	SAS			
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		08/21/12 08:14	SAS			
<u>Inorganics</u>											
Ammonia as N	mg/L	0.012 I	EPA 350.1	0.040	0.009		08/23/12 12:23	MMF			
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ			
Chloride	mg/L	20	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG			
Nitrate+Nitrite (N)	mg/L	11	EPA 353.2	0.40	0.10		08/22/12 15:59	MMF			
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 14:18	MMF			
Sample Description		TA1-PZ-16-RS18									
Matrix		Groundwater									
SAL Sample Number		1209013-21									
Date/Time Collected		08/21/12 08:32									
Collected by		Sean Schmidt									
Date/Time Received		08/21/12 14:40									
Field Parameters											
pH	SU	5.4	DEP FT1100	0.1	0.1		08/21/12 08:32	SAS			
Water Temperature	°C	26.0	DEP FT1400	0.1	0.1		08/21/12 08:32	SAS			
Specific conductance	umhos/cm	275	DEP FT1200	0.1	0.1		08/21/12 08:32	SAS			
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		08/21/12 08:32	SAS			
Inorganics											
Ammonia as N	mg/L	0.024	EPA 350.1	0.040	0.009		08/23/12 12:25	MMF			
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ			
Chloride	mg/L	11	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG			
Nitrate+Nitrite (N)	mg/L	6.1	EPA 353.2	0.40	0.10		08/22/12 16:01	MMF			
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 14:20	MMF			

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013

Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22107 - Ion Chroma	tography 300.0	Prep								
Blank (BH22107-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
LCS (BH22107-BS1)					Prepared 8	& Analyzed:	08/21/12			
Fluoride	0.851	0.040	0.010	mg/L	0.90		95	85-115		
Sulfate	8.69	0.60	0.20	mg/L	9.0		97	85-115		
Orthophosphate as P	0.873	0.040	0.010	mg/L	0.90		97	85-115		
LCS Dup (BH22107-BSD1)					Prepared 8	& Analyzed:	08/21/12			
Fluoride	0.870	0.040	0.010	mg/L	0.90		97	85-115	2	200
Orthophosphate as P	0.962	0.040	0.010	mg/L	0.90		107	85-115	10	200
Sulfate	8.78	0.60	0.20	mg/L	9.0		98	85-115	1	200
Matrix Spike (BH22107-MS1)		Source: 1	209336-01		Prepared 8	& Analyzed:	08/21/12			
Sulfate	43.2	0.60	0.20	mg/L	9.0	35.0	91	85-115		
Fluoride	0.839	0.040	0.010	mg/L	0.90	0.0180	91	85-115		
Orthophosphate as P	0.948	0.040	0.010	mg/L	0.90	ND	105	85-115		
Matrix Spike (BH22107-MS2)		Source: 1	209057-01		Prepared 8	& Analyzed:	08/21/12			
Fluoride	9.94	0.040	0.010	mg/L	9.0	0.0695	110	85-115		
Orthophosphate as P	10.4	0.040	0.010	mg/L	9.0		116	85-115		
Sulfate	83.9	0.60	0.20	mg/L	90	0.774	92	85-115		
Batch BH22114 - Digestion fo	or TP by EPA 36	55.2/SM4500)PE							
Blank (BH22114-BLK1)					Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
-				_						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013

Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22114 - Digestion fo	r TP by EPA 36	5.2/SM4500)PE							
LCS (BH22114-BS1)					Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	0.822	0.040	0.010	mg/L	0.80		103	90-110		
Matrix Spike (BH22114-MS1)		Source: 1	209304-02		Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	1.08	0.040	0.010	mg/L	1.0	0.0385	104	75-125		
Matrix Spike Dup (BH22114-MSD	· · · · · · · · · · · · · · · · · · ·									
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0385	98	75-125	6	25
Batch BH22115 - Digestion fo	r TP by EPA 36	5.2/SM4500	PE							
Blank (BH22115-BLK1)					Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22115-BS1)					Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	0.764	0.040	0.010	mg/L	0.80		95	90-110		
Matrix Spike (BH22115-MS1)		Source: 1	209336-01		Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	1.09	0.040	0.010	mg/L	1.0	0.122	97	75-125		
Matrix Spike Dup (BH22115-MSD	1)	Source: 1	209336-01		Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	1.09	0.040	0.010	mg/L	1.0	0.122	97	75-125	0.4	25
Batch BH22118 - COD prep										
Blank (BH22118-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Chemical Oxygen Demand	10 U	25	10	mg/L			<u> </u>			<u> </u>

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013

Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22118 - COD prep										
LCS (BH22118-BS1)					Prepared 8	k Analyzed:	08/21/12			
Chemical Oxygen Demand	47	25	10	mg/L	50		94	90-110		
Matrix Spike (BH22118-MS1)		Source: 1	209008-03		Prepared 8	k Analyzed:	08/21/12			
Chemical Oxygen Demand	47	25	10	mg/L	50	ND	94	85-115		
Matrix Spike Dup (BH22118-MSD	1)	Source: 1	209008-03		Prepared 8	k Analyzed:	08/21/12			
Chemical Oxygen Demand	49	25	10	mg/L	50	ND	98	85-115	4	32
Batch BH22122 - Ammonia by	SEAL									
Blank (BH22122-BLK1)					Prepared 8	k Analyzed:	08/21/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22122-BS1)					Prepared 8	k Analyzed:	08/21/12			
Ammonia as N	0.54	0.040	0.009	mg/L	0.50		108	90-110		
Matrix Spike (BH22122-MS1)		Source: 1	209008-01		Prepared 8	k Analyzed:	08/21/12			
Ammonia as N	0.52	0.040	0.009	mg/L	0.50	ND	104	90-110		
Matrix Spike Dup (BH22122-MSD	1)	Source: 1	209008-01		Prepared 8	k Analyzed:	08/21/12			
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	103	90-110	2	10
Batch BH22126 - TOC prep										
Blank (BH22126-BLK1)					Prepared 8	& Analyzed:	08/26/12			
Total Organic Carbon	0.50 U	1.0	0.50	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013

Revised Report

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte	resuit	I QL		Office	LCVCI	resuit	701 1 LO	Liiillo	IN D	Lilling
Batch BH22126 - TOC prep										
LCS (BH22126-BS1)					Prepared 8	Analyzed:	08/26/12			
Total Organic Carbon	10.4	1.0	0.50	mg/L	10		104	90-110		
Matrix Spike (BH22126-MS1)		Source: 1	209174-01		Prepared 8	Analyzed:	08/26/12			
Total Organic Carbon	9.38	1.0	0.50	mg/L	10	ND	94	85-115		
Matrix Spike Dup (BH22126-MSD1))	Source: 1	209174-01		Prepared 8	Analyzed:	08/26/12			
Total Organic Carbon	9.58	1.0	0.50	mg/L	10	ND	96	85-115	2	10
Batch BH22136 - alkalinity										
Blank (BH22136-BLK1)					Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BH22136-BLK2)					Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22136-BS1)					Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
LCS (BH22136-BS2)					Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22136-MS1)		Source: 1	209336-06		Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120		
Matrix Spike (BH22136-MS2)		Source: 1	209336-07		Prepared 8	Analyzed:	08/21/12			
Total Alkalinity	250	8.0	2.0	mg/L	120	140	86	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013

Revised Report

Analyta	Result	PQL	MDL	Lloito	Spike	Source	%REC	%REC	RPD	RPD Limit
Analyte	Result	PQL	IVIDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22136 - alkalinity										
Matrix Spike Dup (BH22136-MSD1)		Source: 1	209336-06		Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	0	26
Matrix Spike Dup (BH22136-MSD2)		Source: 1	209336-07		Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	4	26
Batch BH22142 - Digestion for	TKN by EPA	351.2								
Blank (BH22142-BLK1)					Prepared:	08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22142-BS1)					Prepared:	08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	2.42	0.20	0.05	mg/L	2.5		96	90-110		
Matrix Spike (BH22142-MS1)		Source: 1	209008-01		Prepared:	08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	2.35	0.20	0.05	mg/L	2.5	ND	93	80-120		
Matrix Spike Dup (BH22142-MSD1)		Source: 1	209008-01		Prepared:	08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	2.37	0.20	0.05	mg/L	2.5	ND	93	80-120	0.7	20
Batch BH22143 - Digestion for	TKN by EPA	351.2								
Blank (BH22143-BLK1)					Prepared:	08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22143-BS1)					Prepared:	08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	2.48	0.20	0.05	mg/L	2.5	·	98	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013

Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22143 - Digestion fo	or TKN by EPA	351.2								
Matrix Spike (BH22143-MS1)		Source: 1	209013-21		Prepared:	08/21/12 Ar	nalyzed: 08/	23/12		
Total Kjeldahl Nitrogen	3.49	0.20	0.05	mg/L	2.5	1.37	84	80-120		
Matrix Spike Dup (BH22143-MSI	01)	Source: 1	209013-21		Prepared:	08/21/12 Ar	nalyzed: 08/	23/12		
Total Kjeldahl Nitrogen	3.94	0.20	0.05	mg/L	2.5	1.37	102	80-120	12	20
Batch BH22207 - Nitrate 353.	2 by seal									
Blank (BH22207-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22207-BS1)					Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.802	0.04	0.01	mg/L	0.80		100	90-110		
Matrix Spike (BH22207-MS1)		Source: 1	209008-01		Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0281	106	77-119		
Matrix Spike Dup (BH22207-MSI	01)	Source: 1	209008-01		Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0281	106	77-119	0.2	20
Batch BH22211 - Ion Chroma	tography 300.0	Prep								
Blank (BH22211-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Sulfate	0.20 U	0.60	0.20	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit

LCS (BH22211-BS1)					Prepared 8	& Analyzed: (08/22/12			
Fluoride	0.908	0.040	0.010	mg/L	0.90		101	85-115		
Nitrite (as N)	1.40	0.04	0.01	mg/L	1.4		100	85-115		
Orthophosphate as P	0.990	0.040	0.010	mg/L	0.90		110	85-115		
Chloride	2.92	0.20	0.050	mg/L	3.0		97	85-115		
Sulfate	8.84	0.60	0.20	mg/L	9.0		98	85-115		
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115		
LCS Dup (BH22211-BSD1)					Prepared 8	& Analyzed: (08/22/12			
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115	2	200
Fluoride	0.921	0.040	0.010	mg/L	0.90		102	85-115	1	200
Orthophosphate as P	0.962	0.040	0.010	mg/L	0.90		107	85-115	3	200
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	1	200
Nitrite (as N)	1.43	0.04	0.01	mg/L	1.4		102	85-115	2	200
Sulfate	8.83	0.60	0.20	mg/L	9.0		98	85-115	0.1	200
Matrix Spike (BH22211-MS1)		Source: 1	209369-01		Prepared 8	& Analyzed: (08/22/12			
Chloride	0.050 U,+O	0.20	0.050	mg/L	3.0	ND		80-120		
Orthophosphate as P	1.27	0.040	0.010	mg/L	0.90	0.361	101	85-115		
Nitrite (as N)	1.29	0.04	0.01	mg/L	1.4	ND	92	85-115		
Nitrate (as N)	2.50	0.04	0.01	mg/L	1.7	0.846	97	85-115		
Sulfate	109 +O	0.60	0.20	mg/L	9.0	107	22	85-115		
Fluoride	1.20	0.040	0.010	mg/L	0.90	0.280	102	85-115		
Matrix Spike (BH22211-MS2)		Source: 1	208997-05		Prepared 8	& Analyzed: (08/22/12			
Sulfate	142	0.60	0.20	mg/L	90	55.4	96	85-115		
Nitrate (as N)	31.7	0.04	0.01	mg/L	17	15.0	98	85-115		
Nitrite (as N)	13.8	0.04	0.01	mg/L	14		99	85-115		
Orthophosphate as P	8.65	0.040	0.010	mg/L	9.0	0.111	95	85-115		
C.topopatc ac.										
Chloride	93.7	0.20	0.050	mg/L	30	63.0	102	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013

Revised Report

Arrabita	Desult	DOL	MDL	11-24-	Spike	Source	0/ DEO	%REC	DDD	RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22212 - Ion Chromat	tography 300.0	Prep								
Blank (BH22212-BLK1)					Prepared 8	& Analyzed:	08/23/12			
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH22212-BS1)					Prepared 8	& Analyzed:	08/23/12			
Chloride	2.89	0.20	0.050	mg/L	3.0		96	85-115		
LCS Dup (BH22212-BSD1)					Prepared 8	& Analyzed:	08/23/12			
Chloride	2.88	0.20	0.050	mg/L	3.0		96	85-115	0.3	200
Matrix Spike (BH22212-MS1)		Source: 1	209013-04		Prepared 8	& Analyzed:	08/23/12			
Chloride	16.5	0.20	0.050	mg/L	3.0	13.5	100	80-120		
Matrix Spike (BH22212-MS2)		Source: 1	209013-17		Prepared 8	& Analyzed:	08/23/12			
Chloride	17.8	0.20	0.050	mg/L	3.0	15.1	90	80-120		
Batch BH22222 - Nitrate 353.2	2 by seal									
Blank (BH22222-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22222-BS1)					Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.822	0.04	0.01	mg/L	0.80		103	90-110		
Matrix Spike (BH22222-MS1)		Source: 1	209013-12		Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	18.9	0.40	0.10	mg/L	10	9.69	92	77-119		
Matrix Spike Dup (BH22222-MSD	1)	Source: 1	209013-12		Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	18.6	0.40	0.10	mg/L	10	9.69	90	77-119	1	20

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013

Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22301 - Ammonia by	SEAL									
Blank (BH22301-BLK1)					Prepared 8	Analyzed:	08/23/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22301-BS1)					Prepared 8	Analyzed:	08/23/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		97	90-110		
Matrix Spike (BH22301-MS1)		Source: 1	209013-06		Prepared 8	Analyzed:	08/23/12			
Ammonia as N	0.47	0.040	0.009	mg/L	0.50	ND	93	90-110		
Matrix Spike Dup (BH22301-MSD1)	Source: 1	209013-06		Prepared 8	Analyzed:	08/23/12			
Ammonia as N	0.47	0.040	0.009	mg/L	0.50	ND	95	90-110	2	10
Batch BH22305 - COD prep										
Blank (BH22305-BLK1)					Prepared: (08/23/12 Ar	nalyzed: 08	/24/12		
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH22305-BS1)					Prepared: (08/23/12 Ar	nalyzed: 08	/24/12		
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BH22305-MS1)		Source: 1	209016-01		Prepared: (08/23/12 Ar	nalyzed: 08	/24/12		
Chemical Oxygen Demand	54	25	10	mg/L	50	11	86	85-115		
Matrix Spike Dup (BH22305-MSD1)	Source: 1	209016-01		Prepared: (08/23/12 Ar	nalyzed: 08	/24/12		
Chemical Oxygen Demand	56	25	10	mg/L	50	11	90	85-115	4	32
Batch BH22310 - Ion Chromat	ography 300.0	Prep								
Blank (BH22310-BLK1)					Prepared 8	Analyzed:	08/24/12			
Chloride	0.050 U	0.20	0.050	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013

Revised Report

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte	Nesuit	I QL	IVIDE	Offics	Level	rtesuit	/01VLO	LIIIIII	IXI D	LIIIII
Batch BH22310 - Ion Chrom	atography 300.0	Prep								
LCS (BH22310-BS1)					Prepared 8	& Analyzed:	08/24/12			
Chloride	2.97	0.20	0.050	mg/L	3.0		99	85-115		
LCS Dup (BH22310-BSD1)					Prepared 8	& Analyzed:	08/24/12			
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115	0.7	200
Duplicate (BH22310-DUP1)		Source: 1	209014-17		Prepared 8	& Analyzed:	08/24/12			
Chloride	20.5	0.20	0.050	mg/L		19.2			7	10
Matrix Spike (BH22310-MS1)		Source: 1	209014-06		Prepared 8	& Analyzed:	08/24/12			
Chloride	19.8	0.20	0.050	mg/L	6.0	13.4	107	80-120		
Batch BH22327 - Ammonia b	y SEAL									
Blank (BH22327-BLK1)					Prepared 8	& Analyzed:	08/23/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22327-BS1)					Prepared 8	& Analyzed:	08/23/12			
Ammonia as N	0.48	0.040	0.009	mg/L	0.50		96	90-110		
Matrix Spike (BH22327-MS1)		Source: 1	209356-07		Prepared 8	& Analyzed:	08/23/12			
Ammonia as N	0.47	0.040	0.009	mg/L	0.50	ND	95	90-110		
Matrix Spike Dup (BH22327-MS	D1)	Source: 1	209356-07		Prepared 8	& Analyzed:	08/23/12			
Ammonia as N	0.47	0.040	0.009	mg/L	0.50	ND	95	90-110	0.4	10
Batch BH22410 - Nitrate 353	.2 by seal									
Blank (BH22410-BLK1)					Prepared 8	& Analyzed:	08/24/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013

Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22410 - Nitrate 353.	2 by seal									
LCS (BH22410-BS1)					Prepared 8	k Analyzed:	08/24/12			
Nitrate+Nitrite (N)	0.826	0.04	0.01	mg/L	0.80		103	90-110		
Matrix Spike (BH22410-MS1)		Source: 1	209356-07		Prepared 8	& Analyzed:	08/24/12			
Nitrate+Nitrite (N)	1.14	0.04	0.01	mg/L	1.0	0.130	101	77-119		
Matrix Spike Dup (BH22410-MSD	01)	Source: 1	209356-07		Prepared 8	k Analyzed:	08/24/12			
Nitrate+Nitrite (N)	1.10	0.04	0.01	mg/L	1.0	0.130	97	77-119	3	20
Batch BH22415 - Digestion fo	or TP by EPA 36	5.2/SM4500	PE							
Blank (BH22415-BLK1)					Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22415-BS1)					Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.754	0.040	0.010	mg/L	0.80		94	90-110		
Matrix Spike (BH22415-MS1)		Source: 1	209476-08		Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.933	0.040	0.010	mg/L	1.0	ND	93	75-125		
Matrix Spike Dup (BH22415-MSI	01)	Source: 1	209476-08		Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.901	0.040	0.010	mg/L	1.0	ND	90	75-125	3	25
Batch BH22504 - alkalinity										
Blank (BH22504-BLK1)					Prepared:	08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	2.0 U	8.0	2.0	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013

Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22504 - alkalinity										
LCS (BH22504-BS1)					Prepared:	08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22504-MS1)		Source: 1	209007-03		Prepared:	08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	290	8.0	2.0	mg/L	120	170	95	80-120		
Matrix Spike Dup (BH22504-MSD	1)	Source: 1	209007-03		Prepared:	08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	290	8.0	2.0	mg/L	120	170	95	80-120	0	26
Batch BH22701 - Digestion fo	r TKN by EPA	351.2								
Blank (BH22701-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22701-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	2.65	0.20	0.05	mg/L	2.5		105	90-110		
Matrix Spike (BH22701-MS1)		Source: 1	208987-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	7.94	0.20	0.05	mg/L	2.5	5.56	94	80-120		
Matrix Spike Dup (BH22701-MSD	1)	Source: 1	208987-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	8.31	0.20	0.05	mg/L	2.5	5.56	108	80-120	4	20
Batch BH22714 - Ion Chromat	ography 300.0	Prep								
Blank (BH22714-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Chloride	0.050 U	0.20	0.050	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013

Revised Report

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22714 - Ion Chroma	tography 300.0	Prep								
LCS (BH22714-BS1)					Prepared 8	& Analyzed:	08/27/12			
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115		
LCS Dup (BH22714-BSD1)					Prepared 8	& Analyzed:	08/27/12			
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115	0	200
Matrix Spike (BH22714-MS1)		Source: '	1209367-01		Prepared 8	& Analyzed:	08/27/12			
Chloride	51.0 +O	0.20	0.050	mg/L	3.0	231	NR	80-120		
Matrix Spike (BH22714-MS2)		Source: '	1209016-06		Prepared 8	& Analyzed:	08/27/12			
Chloride	24.6	0.20	0.050	ma/L	6.0	17.9	112	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013

Revised Report

Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Allalyte	Result	FQL	IVIDL	UTILS	Level	Result	70KEC	LIIIIIIS	KFD	LIIIII
Batch BH22124 - TOC prep										
Blank (BH22124-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BH22124-BS1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.2	1.0	0.50	mg/L	10		102	90-110		
Matrix Spike (BH22124-MS1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.0	1.0	0.50	mg/L	10	ND	100	85-125		
Matrix Spike Dup (BH22124-MSD1)	Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	9.67	1.0	0.50	mg/L	10	ND	97	85-125	4	25

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

Metals - Quality Control

					Spike	Source		%REC		RPD	
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BH22014 - Metals Prep	paration for EPA	Method 20	0.7						
Blank (BH22014-BLK1)					Prepared 8	& Analyzed: (08/23/12		
Manganese	0.0010 U	0.010	0.0010	mg/L					
Iron	0.020 U	0.10	0.020	mg/L					
Calcium	0.042 U	0.50	0.042	mg/L					
Potassium	0.010 U	0.050	0.010	mg/L					
Magnesium	0.038 I	0.50	0.020	mg/L					
Sodium	0.13 U	0.50	0.13	mg/L					
Boron	0.050 U	0.10	0.050	mg/L					
LCS (BH22014-BS1)					Prepared 8	& Analyzed: (08/23/12		
Potassium	20	0.050	0.010	mg/L	20		101	85-115	
Calcium	20	0.50	0.042	mg/L	20		98	85-115	
Sodium	23	0.50	0.13	mg/L	20		114	85-115	
Manganese	0.39	0.010	0.0010	mg/L	0.40		97	85-115	
Iron	7.9	0.10	0.020	mg/L	8.0		98	85-115	
Magnesium	20	0.50	0.020	mg/L	20		100	85-115	
Boron	0.40	0.10	0.050	mg/L	0.40		99	85-115	
Matrix Spike (BH22014-MS1)		Source: 1	209312-01		Prepared 8	& Analyzed: (08/23/12		
Boron	0.41	0.10	0.050	mg/L	0.40	ND	101	70-130	
Calcium	100	0.50	0.042	mg/L	20	85	84	70-130	
Iron	8.0	0.10	0.020	mg/L	8.0	ND	100	70-130	
Manganese	0.39	0.010	0.0010	mg/L	0.40	ND	98	70-130	
Sodium	28	0.50	0.13	mg/L	20	6.5	106	70-130	
Magnesium	22	0.50	0.020	mg/L	20	1.9	99	70-130	
Potassium	21	0.050	0.010	mg/L	20	0.35	102	70-130	
Matrix Spike (BH22014-MS2)		Source: 1	209313-01		Prepared 8	& Analyzed: (08/23/12		
Manganese	0.39	0.010	0.0010	mg/L	0.40	ND	98	70-130	·
Potassium	27	0.050	0.010	mg/L	20	6.5	100	70-130	
Iron	7.8	0.10	0.020	mg/L	8.0	0.13	96	70-130	
Sodium	81	0.50	0.13	mg/L	20	60	105	70-130	
Boron	0.47	0.10	0.050	mg/L	0.40	0.072	100	70-130	
Calcium	130	0.50	0.042	mg/L	20	110	90	70-130	
Magnesium	23	0.50	0.020	mg/L	20	3.0	98	70-130	

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619

October 2, 2012 Work Order: 1209013

Revised Report

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22014 - Metals	Preparation for EP	A Method 20	00.7							
Matrix Spike Dup (BH2201	4-MSD1)	Source: '	1209312-01		Prepared 8	& Analyzed:	08/23/12			
Sodium	27	0.50	0.13	mg/L	20	6.5	104	70-130	2	30
Boron	0.42	0.10	0.050	mg/L	0.40	ND	104	70-130	3	30
Magnesium	22	0.50	0.020	mg/L	20	1.9	100	70-130	1	30
Calcium	100	0.50	0.042	mg/L	20	85	79	70-130	1	30
Potassium	20	0.050	0.010	mg/L	20	0.35	100	70-130	2	30
Iron	7.9	0.10	0.020	mg/L	8.0	ND	99	70-130	0.9	30
Manganese	0.39	0.010	0.0010	mg/L	0.40	ND	98	70-130	0.3	30
Matrix Spike Dup (BH2201	4-MSD2)	Source:	1209313-01		Prepared 8	& Analyzed:	08/23/12			
Boron	0.47	0.10	0.050	mg/L	0.40	0.072	100	70-130	0.6	30
Calcium	130	0.50	0.042	mg/L	20	110	92	70-130	0.2	30
Manganese	0.40	0.010	0.0010	mg/L	0.40	ND	99	70-130	0.6	30
Sodium	81	0.50	0.13	mg/L	20	60	105	70-130	0.02	30
Potassium	27	0.050	0.010	mg/L	20	6.5	104	70-130	3	30
Iron	8.1	0.10	0.020	mg/L	8.0	0.13	99	70-130	3	30
Magnesium	23	0.50	0.020	mg/L	20	3.0	100	70-130	1	30

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 October 2, 2012 Work Order: 1209013 Revised Report

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

+O Matrix spike source sample was over the reccommended range for the method.

Finder

SAL Project No. 120 90/3

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLD SMAR, FL 34877 813855-1844 fax 8138552218

										ľ								
Name of the second seco	Haran Campa	10,040								<u>J</u>	Contact / Phone;	hone:						
Project Name / Location	Dia lora	2																
	S&GW Test Facility SE#2	-acility S	E#2															
Samplers: (Signature)	7																	
		,	}		}			Ì	PAR	PARAMETER / CONTAINER DESCRIPTION	CONTAIN	IER DESC	RIPTION					
Matrix Codes: DW-Drinking Water VW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water	ther					5O₄ H4, COD, TP	F, NO ₃ , OP,	loc										
Sample Description	Date	a)PG	əmiT	xintsM	Composite Grab	ՀՏՕՊL Р, Н ₂ 9 ТКИ, ИОҳ, И	1∟P, Cool Cl, Alkalinity, SO₄	250mLaG, Co	40mLaV, HCI TOC	250mL P, HN B, Ca, Fe, Mg	1LP, Cool Cl, Alkalinity 250mL P, H ₂ 9	1KN, NH ₄ , NO	cı		oa	pH Conductivity	Temperature	No. of Contain per each loca
01 TA1-PZ-11-EF2	280	218020286	315	ВW	×	-	1	1	2	-					7 C3.0	4	042	
02 TA1-PZ-11-EF2 DUP		0	0280	0,W	×	-	-	-	2	-					48.0	तिह ति न	3245 27.0	
03 TA1-PZ-11-J4		()	5221	GW	×	-					-				3.0	4.5 036	P.44C-280	
04 TA1-PZ-11-K4		11	1521	ВW	×	٦					-				0.40	4.3 Duty 1	1.48 1.4mg	
05 TA1-PZ-11-L2			8411	GW	×	1	1	-	2	-					4 OS.0	4.44	4.66	
06 TA1-PZ-11-L3		1/2	1207	GW	×	1					-				7,84.0	455 3204	4.45.40%	
07 TA1-PZ-11-L4	2823/2		10+0	ΜĐ	×	٠-					-							
08 TA1-PZ-11-L4 DUP	/	10	1045	ВW	×	-					-							
09 TA1-PZ-11-L5	180	8521710280	258	GW	×	1					-				17 250		875027·S	
10 TA1-PZ-09-N3		//	1113	GW	×										1.09 6.5	5 (635	4.82	
11 TA1-PZ-16-N3		11	1130	GW	×							_			as7 6.0	4082 Q	ب کر	
		7/	1087	βW	×	-					-				0.706.4		344.3 27.6	
Containers Prepared/ Relinquished:	Received Received			10 M	ate/Time	Date/Time: 1800	00		Seal intact?	٠			⑤ z					
DateTime	Recei	8			Date/Time:	PAIR (C	10		Samples in	Samples intact upon arrival?	ival?	O	§ N N					
No M	20/2 KM	1	١		ő	٠,	6		Received	Received on ice? Temp		V	S _z					
Reinquished:	30 Received	ed:	7,7	"	Date/Time:		1300		Proper pre	Proper preservatives indicated?	dicated?	Ø	S N N					
Relinquished: Date/Time:	Received		UN	3	Sate/Time:	9/0		T	Rec'd with	Rec'd within holding time?	3.5	Q	Q z s					
									Volatiles re	Volatiles rec'd w/out headspace?	adspace?	>	(2)					
Relinquished: Date/Time:	Received	:; :;		Δ	Date/Time:				Proper con	Proper containers used?	۸.	Q	¥ Z Z				_	1209013
Chain of Custody vis Rev.Date 11/19/01													Chain of Custody	ustody				

SAL Project No. 1209013

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLD SMAR, FL 34677 813-855-1844 fax 813-855-2218

									4000							Γ
	Hazen and Sawyer								יסווושכר / דו	<u>r</u>						
Project Name / Location	To all all all all all all all all all al													1		
	S&GW Test Facility SE#2	E#2														
Samplers: (Signature)		B						PARAMETER / CONTAINER DESCRIPTION	ANTAING	rdia Osada a	2					
Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other						7									istoT) are	
R-reagent Water The Sample Description	Date	əmiT	XinteM	Composite Grab	TKN, NOx, NH. 250mL P, H ₂ SC	1LP, Cool Cl, Alkalinity 250mL P, H ₂ SC	1KN, NH4, NO:	CI				od	Hq	Conductivity	Temperature	No. of Containe per each location
13 TA1-PZ-16-07	1210280	1043	GW	×	-	-						72.0	5.0	331.926.5	12	T
14 TA1-PZ-09-M9	1 0	55.30	GW	×			1					0.80	54	\$12.621	1.7	[
15 TA1-PZ-16-M9	0	0954 0	GW	×			1					P. 784.9		199. 12ch	4.7°	
16 TA1-PZ-09-17	0	0856	GW	×			1					0.%	5.5 84 AD ET.C	640z	7.0	
17 TA1-PZ-16-17	0 1	0411	GW	×			1					0.89	50 81.026.4	81.02	4.3	
18 TA1-PZ-09-RS16	0111110	0736	GW	×			1					0.52 5.7		8.50n cos	2.8	
19 TA1-PZ-16-RS16	0 T	2756	GW	×			1 1					0.40 5.1		2945 25.6	2.6	
20 TA1-PZ-09-RS18	0	0814	GW	×			1					0.32	5.5	363.726.6	ه (ه	
21 TA1-PZ-16-RS18	0	25.50	GW	×			-					826	4	275.2 24.0	0,3	
			11				-								+-	
Pensulua 9/18	800 Received:	X	2	ate/Time	9ate/Time: 1800	0	Se	Seal intact?	<u> </u>	S z z + (S			-		
13/	A Received	}	Δ	ate/Time	Date/Time: 15.10	ام	Sa Sa	Samples intact upon arrival? Received on ice? Temp	rival?	§ § Z	4 ₹					
Relinquished: 7510 Relinquished: 7 Date/Time: 1440	10 Received:			Date/Time:	102/	0 4	<u> </u>	Proper preservatives indicated? Rec'd within holding time?	idicated? ie?	\$ \$ z z © ©	¥ ¥					
Relinquished: Date/Time:	Received:	\		O & Date/Time:	- d	6	> &	Volatiles rec'd w/out headspace? Proper containers used?	adspace? 1?	§ ₹ z }	§ §				4	
Chain of Custoby Xe Rev.Date 111901		i	1				-			Chair	Chain of Custody	<u>}</u>			5106021	200

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
Ciletit Name.	riazeri and Sawyer	Location.		Phone:	
Date Sampled	082012	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-11-EF2	Sample ID	\sim	GPS LAT	
vveii Number	TAT-F2-11-EF2	Sample ID	<u> </u>	GPS LONG	

PURGING DATA

					UKGING	DAIA					
WELL DIAMETER (Inches)	1.40	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	9.77	PURGE PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)	14.80	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (ged Screen (1	EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
WELL VO	DLUME = (TO	TAL DEPTH - ST	ATIC DEPTH)	x WELL CAPI	CITY =						
ONE WELL VOLUME	0.2		1/4 WELL VOLUME			3 WELL VOLUMES	0.6		5 WELL VOLUMES		
		EQUIPMENT VO	DLUME = PUM	P VOLUME +	(TUBING CAI	PACITY X TUI	BING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBIN IN WELL			FINAL TUBIN		-	PURGE TIME START	0159	PURGE TIME END	0814	TOTAL PURGED	1.50
INST. ID	\times	> <	\times	\times	SAL-SAM-63-	SAL-SAM - 6 3 - <u>0/</u>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0_I	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0802	0.30	0.30	0.10	10.00	4.4	26.9	339.1	1.45	37.6	CL GND Y	NONE
0805	0.30	0.60			4.3	26.9	339.7	1.04	52.8		
0808	0.70	0.90			4.2	27.0	334.5	0.92	14.0	1.	
0811	0.30	1.20			4.2	27.0	330.6	0.90	10.71		
0814	0.30	1.50			4.2	27.0	324.5	0.82	9.01	1	
		apacity (gallons/f								'5.88	
TUBIN	G INSIDE DIA	A. CAPACITY (Ga	l./Ft.): 1/8" =	0.0006; 3/16"	= 0.0014; 1	4" = 0.0026;	5/16" = 0.004	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" = 0	0.016

SAMPLING DATA

SAMPLED BY (PRII			SAL			SAMPI SIGNA			C 1	N		
TUBING MATE (CIRCLE	1	PP PE NE	TŪΠ	SAMPLE LEGNTH IN V				SAMPLE PU RATE (n				
SAMPLING INITIATED	0815	SAMPLING ENDED	0816	FIELD CLEANED	Y 🚱	CLEANING STEPS						
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLL REVERS	ECTED BY E FLOW?	Y N (MA)		COLLECTED GH TRAP?	Υ	N (N/A
PRESER' CHECKED		N N/A		ERVATIVES DED								
WEAT CONDI		Clea	~,7	7°								
сомм	ENTS							_				
	TUD							-place Bladder				
Ra	viewed Bv:	ING MATERIAL (ODES: PP=	Polypropylene,	PE= Polyeth	yiene, NP= N	on-inert Plastic	c, iL= letion L	ineα, II=Te	rion		

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

			<u> </u>	COULD	MILI	OAIIII L	ING EGG	<u> </u>			
Client Name:	}	lazen and Sawye	er	Location:				Contact: Phone:			
Date Sampled				SAL Project	1200	1013		Project Name	S&GV	V Test Facility	SE #2
·				#				GPS LAT			
Well Number	'	\1-PZ-11-EF2-D\)P	Sample ID)		GPS LONG			
				P	URGINO	DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	9.77	PURGE PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)	18.80	REFERENCE ELEVATION (NGVD)		ELEV	O WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)	·	TUBING CAPACITY (gal/ft)	
		bmerged Screen TAL DEPTH - ST				EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scre	en (1 Well, 3,3	minutes)
ONE WELL			1/4 WELL	X VVELL CAPI	CIT -	3 WELL	0 (~3	5 WELL		
VOLUME	0,	7 0/	VOLUME = PUM	ID VOLLIME 4	(TURING CA	VOLUMES	O. Ce		VOLUMES	L	
PUMP VOLUME		EQUI MEITT V	TUBING LEGNTH	W VOLUME !	(TODING CA	FLOW CELL VOLUME	I CEONT	ij - 1 LOW OLL	EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL			1	NG LEGNTH (FEET)		PURGE TIME START	0759	PURGE TIME END	08/4	TOTAL PURGED	1.50
INST. ID	X	\times	X	\times	SAL-SAM-63		SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	X	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0802	0.30	0.30	0.10	10.00	4.4	26.9	339./	1.45	37.6	CLOUDY	NONE
0805	0.30	0.60	-		4.3	26.9	338.7		52.8		
0404	0.30	0.90			4.2	27.0	334.5	0.92	140	CLEAR	
08\$1	0.30	1.20			4.2	27.0	730.Ce	0.90	10.71	-	
0814	0.30	1.50			4.2	27.0	324,3	0.82	9.01	1	
		capacity (gallons/								"5.88	
TUBI	NG INSIDE DIA	A. CAPACITY (Ga	al./Ft.): 1/8" =			/4" = 0.0026;	5/16" = 0.00	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" = 1	0.016
				S	AMPLIN			·			
	(/ COMPANY INT)		SAL			1	LER(S) TURES:			tiv	1
	ERIAL CODE E ONE)	PP PE NI	Р (ТО) П		E TUBING WELL (FEET)			SAMPLE PU RATE (r			
SAMPLING INITIATED	0820	SAMPLING ENDED	0821	FIELD CLEANED	YN	CLEANING STEPS	l				
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)		DUPLICATE	YW		LECTED BY SE FLOW?	Y N MA		COLLECTED SH TRAP?	Y N WA
	RVATION IN FIELD?	N N/A	•	ERVATIVES DED							
	THER ITIONS	Cleo	r, 77	10							
COMN	MENTS										_
	SEC. LE							n-place Bladder		A	
D.	eviewed By:	ING MATERIAL	CODES: PP=	rolypropylene	, PE= Polyeti	iyierie, NP= N	on-inert Plasti Date		.inea, II= le	HON	
<u>```</u>	CVICVVCU DY.						_ Date	<u> </u>			

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	н	azen and Sawye	.	Location:				Contact: Phone:			
Date Sampled	0	82012		SAL Project #	1200	1013		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA1-PZ-11-J4		Sample ID		13		GPS LAT			{
				P	URGING	DATA		0.0200			
WELL DIAMETER (inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	9.81	PURGE PUMP CODE	PP) GP
TOTAL WELL DEPTH (Feet)	14.78	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		merged Screen (EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME		TAL DEPTH - ST	1/4 WELL VOLUME			3 WELL VOLUMES	0.5		5 WELL VOLUMES		
	····	EQUIPMENT VO		IP VOLUME +	(TUBING CAI		BING LEGNTE	i) + FLOW CEL			
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			T VOLUME		
INITIAL TUBII IN WELL	· ·		FINAL TUBII IN WELL	NG LEGNTH . (FEET)		PURGE TIME START	1215	PURGE TIME END	1224	TOTAL PURGED	0.90
INST. ID	\times	><	\times	\times	SAL-SAM-63-	SAL-SAM - 6 \$_ <u>0/</u>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	\geq
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Galions)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1218	0.30	0.30	0.10	9.92	4.5	27.9	234-Ce	1.04	18.5	CLEA	NONF
1221	0.30	0.60		1	4.5	27.8	235.8	0.78	16.0		
1224	0.30	0.90			4.5	27.9	236.2	0.40	11.3		
								-	-		
	\Mell C	apacity (gallons/	(oot): 0.75"=0	02, 1.25"=0	0.06. 2"=0.1	16. 3"=0.37	4"=0.65,	5"=1.02, 6	<u> </u> 6"≈1.47, 12	"5.88	
TUBIN		A. CAPACITY (Gallorish				/4" = 0.0026;	5/16" = 0.00				0.016
				S	AMPLIN	G DATA	\				
SAMPLED BY (PR	/ COMPANY NT)		SAL				PLER(S) ATURES:		₹	ry	
TUBING MAT (CIRCL	ERIAL CODE E ONE)	PP PE N	TI TI		E TUBING WELL (FEET)			I .	UMP FLOW mL/min)		
SAMPLING INITIATED FIELD	1225	SAMPLING ENDED FILTER SIZE	1226	FIELD CLEANED	YN	CLEANING STEPS VOC COL	LECTED BY	L NOVA	ŞEMI-VOLS	COLLECTED	Y N(N/A)
FILTERED? PRESER	Y N RVATION IN FIELD?	(μm) N N/A	1	DUPLICATE SERVATIVES DED	Y (C)	REVERS	SE FLOW?	N/A	THROU	GH TRAP?	
WEA	THER ITIONS	Cle	r,88		1						
COM	MENTS										
		PUMP CC	DES: PP=Pe	ristaltic Pump,	GP= Submer	sible Grundfos	Pump, IBP= I	n-place Bladder	r Pump		
		BING MATERIAL	CODES: PP=	Polypropylen	e, PE= Polyet	hylene, NP= I			Lined, TT= To	eflon	
R	eviewed By						Date				

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

			Gr	CONDV	VAICE	SAIVIPL	NG LOC	7			
Client Name:		Hazen and Sawye	ır	Location:				Contact: Phone:			
Date Sampled	0	82012	·	SAL Project	1200	1013		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA1-PZ-11-K4		Sample ID)4		GPS LAT			
<u> </u>				Р	URGINO	DATA		O. O LONG	<u></u>		
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	9.87	PURGE PUMP CODE	€P GP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		ELEV (REFEREN	O WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		bmerged Screen TAL DEPTH - ST			rged Screen (1 ICITY =	EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	0.1	9 G	1/4 WELL VOLUME			3 WELL VOLUMES	0.5		5 WELL VOLUMES		
		EQUIPMENT V	OLUME = PUN	IP VOLUME +	(TUBING CA	PACITY X TUI	BING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL			FINAL TUBII IN WELL			PURGE TIME START	1231	PURGE TIME END	1240	TOTAL PURGED	0.90
INST.	\times	\geq	\geq	\times	SAL-SAM-63-	SAL-SAM - 6 3 . <u>6</u> /	SAL-SAM-63	SAL-SAM-55- OZ	SAL-SAM- 0	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (∆ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1234	0.30	0:30	0./0	10,20	4.3	27.5	239.9	0.70	11.4	CLEAR	NONE
1237	0.30	0.60			4.3	27.4	240.2	0.52	9.42	/	
1240	0.30	0.90			4.3	27.4	244.1	0.40	6.86	/	
1				·							
		apacity (gallons/fo					4"=0.65,	5"≈1.02, 6°	'=1.47, 12"	5.88	
TOBIN	G INSIDE DIA	. CAPACITY (Ga	1./Ft.): 1/8" = (= 0.0014; 1/4 AMPLIN		5/16" = 0.004	3/8" = 0.006	6; 1/2" = 0.0)10; 5/8" = 0	0.016
SAMPLED BY			<u> </u>	3,	VIAL TILL	SAMPI				1/	
TUBING MATE			SAC	CAMPLE	TUDING	SIGNAT	TURES:	~ 7	<u> </u>	<u> </u>	
(CIRCLE		PP PE NP	ΤОП	SAMPLE LEGNTH IN V	VELL (FEET)			SAMPLE PU RATE (m			
INITIATED	1241	ENDED FILTER SIZE	1242	FIELD CLEANED	Y (N)	CLEANING STEPS					
FILTERED?	Y Ø	FILTER SIZE (μm)		DUPLICATE	Y (4)	VOC COLL REVERSE		Y N (NA)	SEMI-VOLS (THROUG	COLLECTED H TRAP?	Y N 🕼
PRESERI CHECKED I		⊘ N N/A	LIST PRESE ADD								
WEAT CONDIT	1	Clean	-, 88	<i></i>							
СОММІ	ENTS										
	THE	PUMP COE	DES: PP=Peris	staltic Pump, G	PF Submersit	ole Grundfos P	Pump, IBP= In-	place Bladder P	ump		
Rev	iewed By:	NG MATERIAL C	ODES. PP=P	olypropylene,	PE= Polyethy	iene, NP= No	on-inert Plastic, Date:	TL= Teflon Lir	ed, TT= Tefl	on	
							Date.				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

			GR	VONDY	VAIER	SAMPLI	NG LOC				
Client Name:		Hazen and Sawye	r	Location:				Contact: Phone:			
Date Sampled		1820n		SAL Project	1960	1013		Project Name	S&GV	V Test Facility	SE #2
Well Number	T	TA1-PZ-11-L2		Sample ID		25		GPS LAT			
L	L			Р		G DATA		GPS LONG			
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	9.89	PURGE PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)	14.78	REFERENCE ELEVATION (NGVD)		ELEV (REFEREN	D WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gai/ft)	
Purge Tee WELL V	chnique: q Si /OLUME = (T0	ubmerged Screen DTAL DEPTH - ST	(1,1/4,1/4 Wel ATIC DEPTH)	l) q Subme	rged Screen (ICITY ≈	1EQ Volume, 3	3, 3 Minutes)	q Partially Sut	merged Scre	en (1 Well, 3,3	minutes)
ONE WELL VOLUME		95	1/4 WELL VOLUME			3 WELL VOLUMES	0.5	86	5 WELL VOLUMES		
PUMP VOLUME		EQUIPMENT V	TUBING LEGNTH	IP VOLUME +	· (TUBING CA	FLOW CELL VOLUME	1	f) + FLOW CEL	EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL	ING LEGNTH (FEET)			NG LEGNTH (FEET)		PURGE TIME START	1138	PURGE TIME END	1147	TOTAL PURGED	0.90
INST.	\times	\times	\times	\geq	SAL-SAM-63	SAL-SAM - 6% 0/	SAL-SAM-63 <u>Ø /</u>	SAL-SAM-55-	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1141	0.30	6.30	0.10	10.25	4.2	27.7	780	0,68	18.4	CLEAN	NONE
1144	0.30	0.60		1	4.2	27.7	782	0,60		1	1
1147	0.30	0.90	}		4.2	17.7	782	0.50	16.2		
	121										
TUBIN		capacity (gallons/fo					4"=0.65, 5/16" = 0.004			5.88	
			<u> </u>			G DATA		, 3/8 = 0.006	; 1/2" = 0.0	10; 5/8" = 0	.016
SAMPLED BY (PRII			SAL			SAMPL SIGNAT			4	M	
TUBING MATE (CIRCLE		PP PE NP	ήπ	SAMPLE LEGNTH IN V				SAMPLE PUI RATE (m			
SAMPLING INITIATED FIELD	1(48 v W	SAMPLING ENDED FILTER SIZE	1148	FIELD CLEANED	Y Ø	CLEANING STEPS VOC COLLI	ECTED BY				
PRESERY CHECKED I	VATION	(μm)	LIST PRESE		Y (N)	REVERSE		YN	THROUGH	OLLECTED HTRAP?	Y N N/A
WEAT CONDIT		Clear									
СОММЕ	ENTS										
	TURII	PUMP COD	ES: PP=Peris	taltic Pump, G	P= Submersib	le Grundfos P	ump, IBP= In-p	olace Bladder P	ımp		
Rev	viewed By:	NG MATERIAL CO	70L3. FF= P	olypropylene,	r= rolyethy	iene, NP= Noi	n-inert Plastic, Date:	TL≃ Teflon Lin	ed, TT= Teflo	on	
	-						Date.				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:	,	Contact:	
Date Sampled		SAL Project	120,0013	Phone: Proiect Name	SOCIAL Took Foolities OF #0
	087,012	#	100 10 13	GPS LAT	S&GW Test Facility SE #2
Well Number	TA1-PZ-11-L3	Sample ID	00	GPS LONG	

PURGING DATA WELL WELL Screen Static Depth **PURGE** (PP) GP DIAMETER CAPACITY Interval UNK То 0.04 UNK to Water **PUMP** .0 9.85 IBP (Inches) (gal/ft) (Feet) (Feet) CODE REFERENCE GROUND WATER **TUBING TUBING** TOTAL WELL **ELEVATION ELEVATION** DIAMETER CAPACITY DEPTH (Feet) 4.74 (NGVD) (REFERENCE-STATIC) (inches) (gal/ft) Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes) WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY = 1/4 WELL ONE WELL 3 WELL 5 WELL 9.195 0.586 VOLUME VOLUME VOLUMES VOLUMES EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME PUMP **TUBING** FLOW CELL EQUIPMEN VOLUME **LEGNTH** VOLUME T VOLUME PURGE INITIAL TUBING LEGNTH FINAL TUBING LEGNTH PURGE TIME TOTAL TIME IN WELL (FEET) IN WELL (FEET) 0.90 **END** 120w **PURGED** START INST. SAL-SAM-63 SAL-SAM -SAL-SAM-63 SAL-SAM-55-SAL-SAM-ID 01 63 01 02 <u>0</u>/ 0_1 TOTAL VOLUME Depth to pН TEMP SP COND TURBIDITY DO VOLUME PURGE COLOR TIME **PURGED** ODOR Water (SU) (oC) (uS/cm) (mg/L) (NTUs) **PURGED** RATE (gpm) (Describe) (Describe) (Gallons) (Feet) $(\Delta < 0.2)$ $(\Delta < 0.2)$ (∆ <5%) (% SAT <20) (<20 NTU) (Gallons) 1700 0.30 0.30 4.4 330.2 0.10 0 27.6 0.5% 13.G CLEAR NONE 1203 0,60 330.8 0.30 9.82 0.51 0.50 0.90 4.5 206 332.4 0.48 7.50 Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16. 3"=0.37. 4"=0.65 5"=1.02, 6"=1.47 12"5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026;

SAMPLING DATA

5/16" = 0.004

3/8" = 0.006;

1/2" = 0.010;

5/8" = 0.016

SAMPLED BY / COMPANY (PRINT)	2 (t C	SAMPLER(S) SIGNATURES:	1	B
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (ÎL) ΤΤ	SAMPLE TUBING LEGNTH IN WELL (FEET)		SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED (707	SAMPLING ENDED 1208	FIELD Y N	CLEANING STEPS	•	
FILTERED?	(μm)	DUPLICATE Y N	VOC COLLECTED BY REVERSE FLOW?		COLLECTED Y N N/A
PRESERVATION CHECKED IN FIELD?	N N/A LIST PRESE				
WEATHER CONDITIONS	Clear, 8°	7°			
COMMENTS					
	PUMP CODES: PP=Peri	staltic Pump, GP= Submersi	ble Grundfos Pump, IBP= In	-place Bladder Pump	
	NG MATERIAL CODES: PP= F	Polypropylene, PE= Polyethy	ylene, NP= Non-inert Plastic	c, TL= Teflon Lined, TT= Tef	flon
Reviewed By:			Date:		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

		GICCONDI	A I LIX SAMIF LING	LOG	
Client Name:	Hazen and Sawyer	Location:		Contact:	
Client Name.	Hazeri and Sawyer	Location.		Phone:	
Date Sampled	082012	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-11-L5	Sample ID	20	GPS LAT	
vveii Number	TA1-PZ-11-L9	Sample ID	09	GPS LONG	
		Pl	JRGING DATA		
VV/ETT	WELL	Screen		Static Denth	PURGE

					URGING	DAIA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	9.85	PURGE PUMP CODE	GP IBP
TOTAL WELL DEPTH (Feet)	14.75	REFERENCE ELEVATION (NGVD)	:	GROUND ELEVA (REFERENC	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
WELL V	OLUME = (TO	TAL DEPTH - ST		x WELL CAPI	CITY =						
ONE WELL VOLUME	0.1		1/4 WELL VOLUME			3 WELL VOLUMES	0.5		5 WELL VOLUMES		
		EQUIPMENT VO	LUME = PUM	IP VOLUME +	(TUBING CAI	PACITY X TUE	BING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL			FINAL TUBIN			PURGE TIME START	1248	PURGE TIME END	1257	TOTAL PURGED	0.90
INST. ID	\times	\times	\times	\times	SAL-SAM-63-	SAL-SAM -	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1251	0.30	0.30	0.10	10.02	4.3	27.5	274.1	0.55	10.2	CLEAR	NONE
1254	0.30	6.60	1		4.3	27.5	275.0	0.48	6.26	1	1
1257	0.30	0.90			4,4	27.5	275.0	0.33	5.40		
											•
	Well C	apacity (gallons/f	oot): 0.75"=0.	02, 1.25"=0	0.06, 2"=0.1	6, 3"=0.37	4"=0.65,	5"=1.02, 6	"=1.47, 12	'5.88	
TUBIN	NG INSIDE DIA	A. CAPACITY (Ga	l./Ft.): 1/8" =	0.0006; 3/16"	= 0.0014; 1	4" = 0.0026;	5/16" = 0.004	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" = 0	0.016

SAMPLING DATA

				SP	VIAILFIIA	GDAIA					
SAMPLED BY (PRIN			SAC			SAMPI SIGNA	` '	75	4	i V	
TUBING MATE (CIRCLE		PP PE NF	т	SAMPLE LEGNTH IN V				SAMPLE PUI RATE (m			
SAMPLING INITIATED	1258	SAMPLING ENDED	1259	FIELD CLEANED	ΥN	CLEANING STEPS					
FIELD FILTERED?	YN	FILTER SIZE (µm)		DUPLICATE	Y (N)		ECTED BY E FLOW?	Y N (MA)	SEMI-VOLS THROUG	COLLECTED SH TRAP?	Y N N/A
PRESER\ CHECKED I		⊘ N N/A		ERVATIVES DED							
WEAT CONDI	HER TIONS	Clear	,90	0							
СОММ	ENTS										
	PUMP CODES: PP=Peristaltic Pump, GP					ible Grundfos	Pump, IBP= I	n-place Bladder F	ump		
	TUBING MATERIAL CODES: PP= Polypropylene, PE= I								nea, (I= le	etion	
Re	viewed By:						Date	:			

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

1 1	UBATVI	EM BOOL			NATER				813-85	5-2218	
Client Name:		Hazen and Sawye		Location:	VAILI	OAM L	ING LOC	Contact:			
				SAL Project	1000	\ - 12		Phone:			
Date Sampled	0	82012		#	1900	1013		Project Name		V Test Facility	SE #2
Well Number		TA1-PZ-09-N3		Sample ID	10	\sim		GPS LAT GPS LONG			
				P	URGINO	S DATA		0.020.10	<u> </u>		
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	6.74	PURGE PUMP CODE	P GP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		ELEV	WATER ATION CE-STATIC)		· •	TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	hnique: q Su	bmerged Screen (TAL DEPTH - ST	(1,1/4,1/4 Well) q Subme	rged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL			1/4 WELL	X WELL CAPI	CITY =	3 WELL	<u> </u>		5 WELL		·
VOLUME	0.1		VOLUME			VOLUMES	0.3		VOLUMES		
		EQUIPMENT VO		IP VOLUME +	(TUBING CAI		BING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL			FINAL TUBII IN WELL			PURGE TIME START	1057	PURGE TIME END	1112	TOTAL PURGED	1.50
INST. ID	\times	>	\times	\times	SAL-SAM-63- _ &/	SAL-SAM -	SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1100	0-30	0.30	0.10	6.92	6.5	78.0	682	2.08	MX	BROWN	NONE
1103	0.30	0.60	1	692	6.5	23.0	642	1-78	MAX		
1106	0.30	0.90			Ce.5	28.1	640	1.40	MAX		
1109	0.30	1.20			65	28.1	Ce 34	1-12	MAT		
1112	0.30	1.50			Ce.5	28.2	635	1.09	MAX	(
TUDIN		apacity (gallons/fo					4"=0.65,			5.88	
TOBIN	IG INSIDE DIA	A. CAPACITY (Ga	I./Ft.): 1/8" = 1		= 0.0014; 1/ AMPLIN		5/16" = 0.004	; 3/8" = 0.000	6; 1/2" = 0.0	010; 5/8" = 0	0.016
SAMPLED BY	/ COMPANY		 _	3/	AIAIL LIIA		LER(S)	_	-		
(PRI			SAL				TURES:		$> \ell$	A	
TUBING MATE (CIRCLE		PP PE NP	TÛΠ	SAMPLE LEGNTH IN \	TUBING WELL (FEET)			SAMPLE PU RATE (n			
SAMPLING INITIATED	1113	SAMPLING ENDED	1154	FIELD CLEANED	Y 🚳	CLEANING STEPS					
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)		DUPLICATE	¥		ECTED BY E FLOW?	Y N (MA)		COLLECTED H TRAP?	Y N (N/A)
PRESER' CHECKED		⊘N N/A	LIST PRESE ADD				7*****				
WEAT CONDI		Clean	r, 84°	•							
СОММ	ENTS										

Revision Date 09/25/09

Reviewed By:

Date:

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump
TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

			GR	OUNDY	VATER :	SAMPLI	ING LO	3			
Client Name:	ŀ	lazen and Sawye	r	Location:				Contact: Phone:			
Date Sampled		>82012		SAL Project	1200	1013		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA1-PZ-16-N3		# Sample ID	100	1013 11		GPS LAT			
				•	URGING	DATA		GPS LONG			
WELL		WELL		Screen	01101110	DAIA		Static Depth		PURGE	$\overline{}$
DIAMETER (Inches)	1.0	CAPACITY (gal/ft)	0.04	Interval (Feet)	UNK	То	UNK	to Water (Feet)	le.78	PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.25	REFERENCE ELEVATION (NGVD)		ELEV	WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (TAL DEPTH - ST			ged Screen (1	EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	O.4		1/4 WELL VOLUME	X WELL CAP	0111 -	3 WELL VOLUMES	1.2	5	5 WELL VOLUMES		
		EQUIPMENT VO	DLUME = PUM	P VOLUME +	(TUBING CAI	PACITY X TUI	BING LEGNTH	l) + FLOW CEL	L VOLUME		
PUMP VOLUME		•	TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL			FINAL TUBIN			PURGE TIME START	11 14	PURGE TIME END	1129	TOTAL PURGED	3.00
INST. ID	\times	$>\!\!<$	\times	> <	SAL-SAM-63-	SAL-SAM - 6 3 - <u>0/</u>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1117	0.60	0.60	0.20	7.42	5.50	27.2	283.5	1.02	MAX	BROWN	NONE
1120	0.60	1.20			5,2	26.6	281.5	0.80	671	l	
1123	0.60	1.80			5.1	26.5	780.4	0.70	351	CLOUDY	
1126	0.60	2.40			5.1	26.5	280.4	0.61	192		
1129	0.60		1	- 1	5.0		280.4		131		1
		apacity (gallons/f								5.88	
TOBIN	IG INSIDE DIA	A. CAPACITY (Ga	i./Ft.): 1/8" = i		= 0.0014; 1/	4" = 0.0026;	5/16" = 0.004	4; 3/8" = 0.00	6; 1/2" = 0.0	010; 5/8" = 6	0.016
SAMPLED BY	// COMPANY		. 4	3/	-			I		• • 1	
(PRI			SAL				TURES:	ر	\(\)	~~~	
TUBING MAT (CIRCL		PP PE NF	. <u>(Γ</u>)μ		TUBING WELL (FEET)			SAMPLE PU RATE (r			
SAMPLING INITIATED	1130	SAMPLING ENDED	//31	FIELD CLEANED	Y (N)	CLEANING STEPS					
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y(N)		LECTED BY SE FLOW?	Y N (N/A		COLLECTED SH TRAP?	Y N NA
PRESER CHECKED		♥N N/A	LIST PRESI ADI								
WEAT CONDI		Clea	r,84	<i>†</i>							
сомм	IENTS										
								n-place Bladder			
	TUB	ING MATERIAL	CODES: PP=	Polypropylene	, PE= Polyeth	nylene, NP= N	Ion-inert Plasti	c, TL= Teflon L	ined, TT= Te	flon	

Reviewed By:

Date:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

1 1	UBATVIE	EW BOULE			VATER S				010-000	J-2210	
Client Name:	Н	azen and Sawyer		Location:				Contact:			
Date Sampled	~	80012		SAL Project	1300	13		Phone: Project Name	S&GV	V Test Facility	SE #2
Well Number	0	8 20 12 TA1-PZ-09-07		# Sample ID	1000	<u> </u>		GPS LAT			
vveii ivumber		TAT-P2-09-07		•	URGING	DATA		GPS LONG			
WELL		WELL		Screen	OKGING	DATA		Static Depth		PURGE	<u> </u>
DIAMETER (Inches)	1.0	CAPACITY (gal/ft)	0.04	Interval (Feet)	UNK	То	UNK	4-10/-4	6.91	PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.84	REFERENCE ELEVATION (NGVD)	!	GROUNE ELEV/ (REFEREN	ATION		:	TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		merged Screen (EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL	OLUME = (TO)	TAL DEPTH - STA	1/4 WELL	X WELL CAPI	CITY =	3 WELL			5 WELL		
VOLUME	0.	117	VOLUME			VOLUMES	0.35	51	VOLUMES		
	T	EQUIPMENT VO	DLUME = PUN	IP VOLUME +	(TUBING CAI	PACITY X TUE	BING LEGNTH) + FLOW CEL	L VOLUME	I	
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	1000	PURGE TIME END	1021	TOTAL PURGED	1.50
INST. ID	\times	\times	\times	\times	SAL-SAM-63-	SAL-SAM - 6 3 - <u>0/</u>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0 <u>/</u>	\geq	\geq
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe
1009	0.30	0.30	0.10	7.85	5.2	27.7	337.8	1.42	MAX	BROWN	NON
1012	0,30	0.60	1		5.2	77.7	3 3 8.	1.02	441	1	1
1015	0.30	0.90		<u>, h</u>	5.3	27.7	340.0		329	CLOUPY	
1018	0.30				5.3	27.7	342.)		310		
1021	6.30	1.50	<u> </u>		5.4	27.6	1	0.70	211	<u> </u>	
		apacity (gallons/f					4"=0.65, 5/16" = 0.00			.010: 5/8" =	0.016
TOBI	NG INSIDE DIA	A. CAPACITY (Ga	11./Ft.): 1/6 =		AMPLIN			4, 3/0 - 0.00	10, 112 - 0	.010, 0/0	0.010
SAMPLED B	Y / COMPANY		- 1		7 11013 11111		LER(S)		-1	- 14	/
	INT)		SAL			SIGNA	TURES:	-		~~/	
	TERIAL CODE LE ONE)	PP PE N	n (ii)		E TUBING WELL (FEET)				UMP FLOW mL/min)		
SAMPLING INITIATED	1022	SAMPLING ENDED	1023	FIELD CLEANED	Y(N)	CLEANING STEPS			ologii voi d	OOLLEGIE	т
FIELD FILTERED?	Y 60	FILTER SIZE (μm)	LIET POS	DUPLICATE	Y (N)		LECTED BY SE FLOW?	Y N WA		GH TRAP?	YNW
	RVATION O IN FIELD?	Ø N N/A		DED							
	THER	cle	2at, S	30°							
СОМ	MENTS										

Revision Date 09/25/09

Reviewed By:

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump
TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Date:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

			GR	COUNDY	VATER :	SAMPLI	NG LO	3			
Client Name:	F	lazen and Sawye		Location:				Contact: Phone:			
Date Sampled	\sim	82012		SAL Project #	1209	013		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA1-PZ-16-07		Sample ID	ì	2		GPS LAT			
				D	URGING	DATA		GPS LONG			
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	6 .64	PURGE PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)	17.28	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	ATION			TUBING DIAMETER (Inches)	-	TUBING CAPACITY (gal/ft)	
		omerged Screen (TAL DEPTH - ST			ged Screen (1	EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	O.4	25	1/4 WELL VOLUME			3 WELL VOLUMES	1.2		5 WELL VOLUMES		
PUMP		EQUIPMENT VO	TUBING LEGNTH	IP VOLUME +	(TUBING CAI	FLOW CELL VOLUME	BING LEGNIF	i) + FLOW CEL	EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL				NG LEGNTH (FEET)		PURGE TIME START	1027	PURGE TIME END	1042	TOTAL PURGED	3.00
INST. ID	\times	\times	\times	\times	SAL-SAM-63-	SAL-SAM - 6 % - <u>♡ /</u>		SAL-SAM-55-	SAL-SAM- 0_/_	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1030	0.60	0.60	0.70	6.80	5.0	26.5	303.4	0.80	MX	Brown	NONE
1033	0.60	1.20			5.0	26.5	302.0	0.54	268	CLOUDY	
1036	0.60	1.80			5.0	26.5	302.0	0.40	158		
1039	0.60	2.40			5.0	26.5	302.0	0.37	98.2		
1042	0.60	3.00	-	7	5.0	26.5	301.9	0.24	33.7	21	

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; **SAMPLING DATA**

1.25"=0.06,

5/16" = 0.004; 3/8" = 0.006;

5"=1.02,

4"=0.65,

Date:

12"5.88 1/2" = 0.010;

6"=1.47,

5/8" = 0.016

SAMPLED BY / COMPANY SAMPLER(S) SIGNATURES: (PRINT) SAMPLE PUMP FLOW SAMPLE TUBING TUBING MATERIAL CODE PP PE NP (CIRCLE ONE) LEGNTH IN WELL (FEET) RATE (mL/min) SAMPLING SAMPLING FIELD CLEANING YOU 1044 CLEANED **ENDED** STEPS INITIATED SEMI-VOLS COLLECTED FIFLD FILTER SIZE **VOC COLLECTED BY** Y (4) Y N (NA Y N (N/A DUPLICATE **REVERSE FLOW?** THROUGH TRAP? FILTERED? (µm) LIST PRESERVATIVES PRESERVATION ⊘N N/A CHECKED IN FIELD? ADDED clear, 82° WEATHER CONDITIONS **COMMENTS** PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

2"=0.16,

3"=0.37,

Reviewed By:

Well Capacity (gallons/foot): 0.75"=0.02,

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 B13-855-1844 FAX 813-855-2218

11	O BAYVIE	EW BOULE					3-855-16 NG LOG		813-85t	5-2218	
Client Name:		lazen and Sawye		Location:	•, • • • • • • • • • • • • • • • • • •	<u></u>		Contact:			
				SAL Project	1200	012		Phone: Project Name	\$8.GV	V Test Facility	SE #2
Date Sampled		182012		#	1209			GPS LAT	3001	v rest racility	3E #2
Well Number		TA1-PZ-09-M9		Sample ID		4		GPS LONG			
					URGING	DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	6.90	PURGE PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)	100	REFERENCE ELEVATION (NGVD)		GROUNE ELEV/ (REFERENC	ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	hnique: q Sul	omerged Screen of TAL DEPTH - ST.	1,1/4,1/4 Well ATIC DEPTH)) q Submei x WELL CAPI	ged Screen (1 CITY =	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	0.1	18	1/4 WELL VOLUME			3 WELL VOLUMES	0.3		5 WELL VOLUMES		
		EQUIPMENT V	DLUME = PUN	IP VOLUME +	(TUBING CA	PACITY X TUI	BING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL				NG LEGNTH . (FEET)		PURGE TIME START	0922	PURGE TIME END	0937	TOTAL PURGED	1.50
INST.	X	\times	\times	\times	SAL-SAM-63		SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0975	0,30	0.30	0.10	7.08	5.4	27.3	284.8	1.25	MAT	BROWN	NONE
0928	6.30	0.60			5.4	27.2	270.2	1.14	658	1	
0971	0.30	0.90			5.4	27.2	244.5	1.02	368	1	
0934	0.30	1-70			5.4	27.2	240.3	0.84	780		
0977	0.30	1.50		1	5.4	27-1		5"=1.02.		."5.88	1
TUBI		Capacity (gallons/					5/16" = 0.00 ₄				0.016
		· · · · · · · · · · · · · · · · · · ·	,		AMPLIN		1				
	(/ COMPANY INT)		540			SAMF	PLER(S) ATURES:		*	4	
	ERIAL CODE .E ONE)	PP PE N	РФП		E TUBING WELL (FEET)				UMP FLOW mL/min)		
SAMPLING INITIATED	0938	SAMPLING ENDED	0939	FIELD CLEANED	Y (N)	CLEANING STEPS					
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)		DUPLICATE	YW		LECTED BY SE FLOW?	Y N (MA		GH TRAP?	Y N (N/A
	RVATION IN FIELD?	O N N/A		ERVATIVES DED							
	THER ITIONS	Cleo	ir, 80								
СОМ	MENTS										
		PUMP CO BING MATERIAL	ODES: PP=Pe	ristaltic Pump	GP= Submer	sible Grundfos	Pump, IBP= I	n-place Bladde	rPump Lined TT≕ T	eflon	
	TUI eviewed By		CODES: PP=	Polypropylen	e, re= rolyet	nylene, NP=	Date		Latou, 11-1	Ţ.,J.,	

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

	Harris and Course	1		Contact:	
lient Name:	Hazen and Sawyer	Location:		Phone:	
ate Sampled	082012	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
	T14 B7 40 140	0	16-	GPS LAT	
lell Number	TA1-PZ-16-M9	Sample ID	19	GPS LONG	

PURGING DATA **PURGE** Static Depth WELL WELL Screen (PP GP G.95 PUMP DIAMETER CAPACITY Interval UNK То UNK to Water 0.04 IBP 1.0 (gal/ft) (Feet) CODE (Feet) (Inches) **TUBING TUBING** REFERENCE **GROUND WATER** TOTAL WELL **ELEVATION** DIAMETER CAPACITY **ELEVATION** DEPTH (Feet) 17.3C (REFERENCE-STATIC) (Inches) (gal/ft) (NGVD) Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY = q Partially Submerged Screen (1 Well, 3,3 minutes) 3 WELL 5 WELL 1/4 WELL ONE WELL -24 VOLUMES VOLUME VOLUME VOLUMES EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME FLOW CELL **EQUIPMEN TUBING** PUMP T VOLUME VOLUME VOLUME LEGNTH PURGE INITIAL TUBING LEGNTH FINAL TUBING LEGNTH **PURGE TIME** TOTAL TIME 0953 1.50 **PURGED** 0944 **END** IN WELL (FEET) IN WELL (FEET) START SAL-SAM-SAL-SAM-63 SAL-SAM -SAL-SAM-63 SAL-SAM-55-INST 01 01 02 01 63-0 / ID TOTAL TEMP SP COND DO TURBIDITY Depth to pН VOLUME COLOR ODOR VOLUME **PURGE** (NTUs) (uS/cm) (mg/L) Water (SU) (oC) TIME **PURGED PURGED** RATE (gpm) (Describe) (Describe) (∆ <5%) (% SAT <20) (<20 NTU) (Gallons) (Feet) $(\Delta < 0.2)$ $(\Delta < 0.2)$ (Gallons) VONE 7.22 790.Z 1.08 **1**9.7 CLEAR 0947 0.60 0.60 5.O 0.20 1.20 0.82 294. S 0.60 0950 26.4 0.60 1.50 29 8**.**4 5.0 CLEAD 0,18 0953 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02. 6"=1.47 12"5.88 Well Capacity (gallons/foot): 0.75"=0.02,

SAMPLING DATA

5/16" = 0.004;

3/8" = 0.006;

5/8" = 0.016

1/2" = 0.010;

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026;

SAMPLED BY (PRIN			SAL			i .	LER(S) TURES:		\sim	Ŋ	
TUBING MATE (CIRCLE		PP PE NI	» (Т) П	SAMPLE LEGNTH IN V				SAMPLE PU RATE (n			
SAMPLING INITIATED	0954	SAMPLING ENDED	0955	FIELD CLEANED	Y(N)	CLEANING STEPS					
FIELD FILTERED?	YW	FILTER SIZE (μm)		DUPLICATE	(<u>s</u>)		ECTED BY E FLOW?	Y N N/A		COLLECTED SH TRAP?	Y N (NA
PRESER\ CHECKED I		Ŋ N N/A		ERVATIVES DED							
WEAT CONDIT											
СОММ	ENTS										
		PUMP CO	DES: PP=Pe	ristaltic Pump,	GP= Submers	sible Grundfos	Pump, IBP= Ir	n-place Bladder	Pump	effon	
		ING MATERIAL	CODES: PP=	Polypropylene	, PE= Polyeti	nyiene, NP= N			ineu, II-I	511011	
∦ Re	viewed By:						Date	<u>. </u>			

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

PUMP VOLUME PUMP VOLUME INITIAL TUBING IN WELL (FILE) INST. ID	7.0 7.85 nique: q Subbudde = (TOT O.17) G LEGNTH	TA1-PZ-09-I7 WELL CAPACITY (gal/ft) REFERENCE ELEVATION (NGVD) omerged Screen (TAL DEPTH - ST.	(1,1/4,1/4 We ATIC DEPTH 1/4 WELL VOLUME DLUME = PU TUBING LEGNTH FINAL TUB	Screen Interval (Feet) GROUNI ELEV. (REFEREN II) q Subme) x WELL CAP	UNK UNK O WATER ATION CE-STATIC) rged Screen (1	To EQ Volume, 3 3 WELL VOLUMES PACITY X TUE FLOW CELL	0.5		merged Screen 5 WELL VOLUMES L VOLUME	PURGE PUMP CODE TUBING CAPACITY (gal/ft)	PP) GP
WELL DIAMETER (Inches) FOTAL WELL DEPTH (Feet) Purge Techn WELL VOL ONE WELL VOLUME PUMP VOLUME INITIAL TUBING IN WELL (F	7.0 9.85 nique: q Sub- DLUME = (TOT	WELL CAPACITY (gal/ft) REFERENCE ELEVATION (NGVD) omerged Screen (FAL DEPTH - ST.	(1,1/4,1/4 We ATIC DEPTH 1/4 WELL VOLUME DLUME = PU TUBING LEGNTH FINAL TUB	Sample ID Screen Interval (Feet) GROUNI ELEV. (REFEREN II) q Subme) x WELL CAP	UNK UNK O WATER ATION CE-STATIC) rged Screen (1	To EQ Volume, 3 WELL VOLUMES PACITY X TUE FLOW CELL	6, 3 Minutes)	Project Name GPS LAT GPS LONG Static Depth to Water (Feet) TUBING DIAMETER (Inches) q Partially Sub	merged Screen 5 WELL VOLUMES L VOLUME	PURGE PUMP CODE TUBING CAPACITY (gal/ft)	PP) GP
WELL DIAMETER (Inches) FOTAL WELL DEPTH (Feet) Purge Techn WELL VOL ONE WELL VOLUME PUMP VOLUME INITIAL TUBING IN WELL (F	7.0 9.85 nique: q Sub- DLUME = (TOT	WELL CAPACITY (gal/ft) REFERENCE ELEVATION (NGVD) omerged Screen (FAL DEPTH - ST.	(1,1/4,1/4 We ATIC DEPTH 1/4 WELL VOLUME DLUME = PU TUBING LEGNTH FINAL TUB	Screen Interval (Feet) GROUNI ELEV. (REFEREN II) q Subme) x WELL CAP	UNK UNK O WATER ATION CE-STATIC) rged Screen (1	To EQ Volume, 3 WELL VOLUMES PACITY X TUE FLOW CELL	6, 3 Minutes)	GPS LAT GPS LONG Static Depth to Water (Feet) TUBING DIAMETER (Inches) q Partially Sub	merged Screen 5 WELL VOLUMES L VOLUME	PURGE PUMP CODE TUBING CAPACITY (gal/ft)	PP) GP
WELL DIAMETER (Inches) FOTAL WELL DEPTH (Feet) Purge Techn WELL VOL ONE WELL VOLUME PUMP VOLUME INITIAL TUBING IN WELL (F	9.85 nique: q Subbudge = (TOT	WELL CAPACITY (gal/ft) REFERENCE ELEVATION (NGVD) omerged Screen (FAL DEPTH - ST.	(1,1/4,1/4 We ATIC DEPTH 1/4 WELL VOLUME DLUME = PU TUBING LEGNTH FINAL TUB	Screen Interval (Feet) GROUNI ELEV. (REFEREN II) q Subme) x WELL CAP	UNK D WATER ATION CE-STATIC) rged Screen (1 CITY =	To To EQ Volume, 3 3 WELL VOLUMES PACITY X TUE FLOW CELL	6, 3 Minutes)	GPS LONG Static Depth to Water (Feet) TUBING DIAMETER (Inches) q Partially Sub	merged Scree 5 WELL VOLUMES L VOLUME	PUMP CODE TUBING CAPACITY (gal/ft)	ÍBP
DIAMETER (Inches) FOTAL WELL DEPTH (Feet) Purge Techn WELL VOL ONE WELL VOLUME PUMP VOLUME INITIAL TUBING IN WELL (F	9.85 nique: q Subbudge = (TOT	CAPACITY (gal/ft) REFERENCE ELEVATION (NGVD) omerged Screen (TAL DEPTH - ST.	(1,1/4,1/4 We ATIC DEPTH 1/4 WELL VOLUME DLUME = PU TUBING LEGNTH FINAL TUB	Screen Interval (Feet) GROUNI ELEV. (REFEREN II) q Subme) x WELL CAP	UNK D WATER ATION CE-STATIC) rged Screen (1 CITY =	To EQ Volume, 3 3 WELL VOLUMES PACITY X TUE FLOW CELL	6, 3 Minutes)	to Water (Feet) TUBING DIAMETER (Inches) q Partially Sub	merged Scree 5 WELL VOLUMES L VOLUME	PUMP CODE TUBING CAPACITY (gal/ft)	ÍBP
DIAMETER (Inches) FOTAL WELL DEPTH (Feet) Purge Techn WELL VOL ONE WELL VOLUME PUMP VOLUME INITIAL TUBING IN WELL (F	9.85 nique: q Subbudge = (TOT	CAPACITY (gal/ft) REFERENCE ELEVATION (NGVD) omerged Screen (TAL DEPTH - ST.	(1,1/4,1/4 We ATIC DEPTH 1/4 WELL VOLUME DLUME = PU TUBING LEGNTH FINAL TUB	Interval (Feet) GROUNI ELEV. (REFEREN II) q Subme) x WELL CAP	D WATER ATION CE-STATIC) rged Screen (1 CITY =	3 WELL VOLUMES PACITY X TUE	6, 3 Minutes)	to Water (Feet) TUBING DIAMETER (Inches) q Partially Sub	merged Scree 5 WELL VOLUMES L VOLUME	PUMP CODE TUBING CAPACITY (gal/ft)	ÍBP
PUMP VOLUME INITIAL TUBING IN WELL (FINST. ID	nique: q Sub LUME = (TOT	ELEVATION (NGVD) omerged Screen (FAL DEPTH - ST.	ATIC DEPTH 1/4 WELL VOLUME DLUME = PU TUBING LEGNTH FINAL TUB	(REFEREN II) q Subme) x WELL CAP MP VOLUME +	ATION CE-STATIC) rged Screen (1 ICITY =	3 WELL VOLUMES PACITY X TUR	0.5	DIAMETER (Inches) q Partially Sub	5 WELL VOLUMES L VOLUME	CAPACITY (gal/ft)	minutes)
WELL VOLUME PUMP VOLUME INITIAL TUBING IN WELL (F	G LEGNTH	TAL DEPTH - ST	ATIC DEPTH 1/4 WELL VOLUME DLUME = PU TUBING LEGNTH FINAL TUB	MP VOLUME +	ICITY =	3 WELL VOLUMES PACITY X TUR	0.5	22	5 WELL VOLUMES L VOLUME	en (1 Well, 3,3	minutes)
PUMP VOLUME PUMP VOLUME INITIAL TUBINO IN WELL (F	G. 17	7 4	1/4 WELL VOLUME DLUME = PU TUBING LEGNTH FINAL TUB	MP VOLUME +		VOLUMES PACITY X TUI FLOW CELL			VOLUMES L VOLUME		
VOLUME INITIAL TUBING IN WELL (F INST. ID		EQUIPMENT VO	TUBING LEGNTH FINAL TUB		(TUBING CA	FLOW CELL	BING LEGNTH) + FLOW CEL			
VOLUME INITIAL TUBING IN WELL (F INST. ID			LEGNTH FINAL TUB	ING LEGNTH							
IN WELL (F			l .	ING LEGNTH		VOLUME		,	T VOLUME		
ID		$\overline{}$		L (FEET)		PURGE TIME START	0740	PURGE TIME END	0855	TOTAL PURGED	1.50
		$>\!\!<$	\times	\supset	SAL-SAM-63 <u>O</u>	SAL-SAM - 6 3 - <i>C</i> /	SAL-SAM-63-	SAL-SAM-55-	SAL-SAM- 0 <u> </u>	\times	\times
	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe
0843	0.30	0.30	0.10	5.62	5.4	26.9	295.1	1.25	MAX	BROWN	Nons
0846	0.30	0.60			5.4	27.0	792.8	1-20	MAX		
0849	0.30	0.90			5.4	27,0	281.5	1.10	MAX		
0852	0.30	1.20			5.4	27.0	245.9	0.89	MAX		
0855	0.30	1.50	1		5.5	27.0	264.0	L	994	15.00	
TURING		apacity (gallons/i					, 4"=0.65, 5/16" = 0.004			"5.88 010: 5/8" =	0.016
TOBING	G INSIDE DIA	. OAFAOITT (Ge	a 170 ·			G DATA		., 0,0 0.00			
SAMPLED BY /			SAL	<u> </u>	THE LINE	SAMP	PLER(S) TURES:		1	ref	
TUBING MATER		PP PE N	РЮП		E TUBING WELL (FEET)			SAMPLE PI RATE (I			
SAMPLING INITIATED	0856		0857	FIELD CLEANED	Y (N)	CLEANING STEPS			lo-minaria		
FIELD FILTERED? PRESERV	Y (N)	FILTER SIZE (μm)		DUPLICATE SERVATIVES	Y 🐿		LECTED BY SE FLOW?	Y N N/A		COLLECTED GH TRAP?	YNO

CIRCLE ONE)

PP PE NP (T) TI LEGNTH IN WELL (FEET)

SAMPLING INITIATED 08 5 SAMPLING ENDED 09 5 T CLEANED Y N CLEANING STEPS

FIELD Y N FILTER SIZE (LIM)

PRESERVATION CHECKED IN FIELD?

WEATHER CONDITIONS

COMMENTS

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

RATE (mL/min)

PUMP COLES IN FIELD Y N N/A

SEMI-VOLS COLLECTED Y N N/A

THROUGH TRAP?

Y N N/A

SEMI-VOLS COLLECTED Y N N/A

THROUGH TRAP?

Y N N/A

SEMI-VOLS COLLECTED Y N N/A

THROUGH TRAP?

Y N N/A

SEMI-VOLS COLLECTED Y N N/A

THROUGH TRAP?

Y N N/A

SEMI-VOLS COLLECTED Y N N/A

THROUGH TRAP?

Y N N/A

SEMI-VOLS COLLECTED Y N N/A

THROUGH TRAP?

Y N N/A

SEMI-VOLS COLLECTED Y N N/A

THROUGH TRAP?

Y N N/A

SEMI-VOLS COLLECTED Y N N/A

THROUGH TRAP?

Y N N/A

SEMI-VOLS COLLECTED Y N N/A

THROUGH TRAP?

Y N N/A

SEMI-VOLS COLLECTED Y N N/A

THROUGH TRAP?

Y N N/A

SEMI-VOLS COLLECTED Y N N/A

THROUGH TRAP?

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

11	O BAYVII	EW BOULE					3-855-18 ING LOC		813-85:	5-2218	
Client Name:	ŀ	lazen and Sawye		Location:				Contact: Phone:			
Date Sampled	25	82012		SAL Project	1209	M13		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA1-PZ-16-l7		Sample ID	r)		GPS LAT			
				Р	URGING	DATA		GPS LONG			
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	Ce-65	PURGE - PUMP CODE	(PP) GP
TOTAL WELL DEPTH (Feet)	1 1316	REFERENCE ELEVATION (NGVD)		(REFEREN	ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		bmerged Screen TAL DEPTH - ST				EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME		418	1/4 WELL VOLUME			3 WELL VOLUMES	1.2		5 WELL VOLUMES		
		EQUIPMENT V		IP VOLUME +	(TUBING CAI		BING LEGNTH	i) + FLOW CEL			
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			T VOLUME		
INITIAL TUBII IN WELL			FINAL TUBII IN WELI	NG LEGNTH _ (FEET)		PURGE TIME START	0901	PURGE TIME END	69/6	TOTAL PURGED	1.80
INST. ID	\times	\times	\times	\times	SAL-SAM-63-	SAL-SAM - 6 % - <i>Oj</i>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0904	0.60	0.60	0.20	7-11	5.0	26.6	288.0	1.12	19.0	CLEAR	NONE
0807	0.60	1.20			5.0	26.5	288.2	1.04	18-2		
0910	0.60	1.80		- (5.0	26.4	291.0	0.89	17.7		
	Well 0	Lapacity (gallons/	foot): 0.75"=0.	02, 1.25"=0	0.06, 2"=0.1	16, 3"=0.37	, 4"=0.65,	5"=1.02, 6	b"=1.47, 12	"5.88	1
TUBIN	NG INSIDE DI	A. CAPACITY (G	al./Ft.): 1/8" =				5/16" = 0.004	4; 3/8" = 0.00	06; 1/2" = 0.	010; 5/8" =	0.016
				S	AMPLIN		PLER(S)			w	
SAMPLED BY (PR	(/ COMPANY INT)		SAL	T			TURES:				
	ERIAL CODE E ONE)	PP PE N	Р 🖒 ТТ	LEGNTH IN	E TUBING WELL (FEET)			-	UMP FLOW mL/min)		
SAMPLING INITIATED FIELD	09/1	SAMPLING ENDED FILTER SIZE	0912	FIELD CLEANED	Y (N)	CLEANING STEPS VOC COL	LECTED BY	V 11 (11)		COLLECTED	Y N (N/A
FILTERED? PRESER	RVATION OIN FIELD?	(μm) N N/A		DUPLICATE SERVATIVES DED	YN	REVERS	SE FLOW?	Y N (N/A	THROU	GH TRAP?	1 11 (11)
WEA.	THER ITIONS	Clea	r, 80								
COM	MENTS										
		PUMP C	ODES: PP=Pe	eristaltic Pump	, GP= Submer	sible Grundfos	s Pump, IBP= I	n-place Bladde	r Pump	office	
	TU eviewed By	BING MATERIAL	CODES: PP=	Polypropylen	e, PE= Polyet	hylene, NP≖	Non-inert Plast Date		Linea, II= I	elion	

Reviewed By:

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

			GR	CONDY	VAIER	SAMPLI	NG LOC				
Client Name:	Н	lazen and Sawye	r	Location:				Contact: Phone:		·	
Data Camalad				SAL Project	1000	713		Project Name	S&GV	V Test Facility	SF #2
Date Sampled	08	2112		#	10091	<u> </u>		GPS LAT	3004	v restraciity	OL #2
Well Number	7	TA1-PZ-09-RS16		Sample ID)	8		GPS LONG			
				Р	URGING	DATA					
WELL DIAMETER (Inches)	왕1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	G.13	PURGE PUMP CODE	GP IBP
TOTAL WELL DEPTH (Feet)	/ · • ·	REFERENCE ELEVATION (NGVD)		GROUND ELEV/ (REFEREN	ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gai/ft)	
Purge Tec	hnique: q Sub	omerged Screen TAL DEPTH - ST	(1,1/4,1/4 Well) q Submei	ged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	O-/	48	1/4 WELL VOLUME			3 WELL VOLUMES	0.4		5 WELL VOLUMES		I
		EQUIPMENT V	DLUME = PUM	IP VOLUME +	(TUBING CAR	PACITY X TUE	BING LEGNTH T) + FLOW CEL			
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			T VOLUME		
INITIAL TUBI IN WELL				NG LEGNTH _ (FEET)		PURGE TIME START	0720	PURGE TIME END	0735	TOTAL PURGED	1.50
INST. ID	\times	$>\!\!<$	\times	\times	SAL-SAM-63-	SAL-SAM - 6 5 - <u>0/</u>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0 <u>#</u>	\geq	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0723	0.30	0.10	0.10	6.42	5.7	25.8	305.7	1.48	MAT	BROWN	NONE
0726	0.30	0.60			5.7	25.9		1.32	1	1	/
0729	0.30	0.90			5.7	25.9	3048	1.02			+
0732	0.30	1.20			5.7	75.8	1	0.74			
0135	0.30	1,50	l .	1	5.7	25.8	303.6	0.52	_ (BROW	/
		Capacity (gallons/					, 4"=0.65, 5/16" = 0.00			.010: 5/8" =	0.016
TUBII	NG INSIDE DIA	A. CAPACITY (G	al./Ft.): 1/8" =		AMPLIN	/4" = 0.0026;		4, 3/6 - 0.00	10, 1/2 - 0.	.010, 3/0 -	0.010
CAMPLED D	//COMPANY			3,	AWIPLIN	T	PLER(S)			0 . /	·····
_	(/ COMPANY INT)		SAL				TURES:			100	
	ERIAL CODE E ONE)	PP PE N	Р (1) П		E TUBING WELL (FEET))			UMP FLOW mL/min)		
SAMPLING INITIATED	0136	SAMPLING ENDED	0737	FIELD CLEANED	YW	CLEANING STEPS	'				
FIELD	Y (N)	FILTER SIZE		DUPLICATE	(D)	VOC COL	LECTED BY SE FLOW?	Y N WA		COLLECTES GH TRAP?	Y N (N/A
	RVATION IN FIELD?	(μm) Y N N/A	1	SERVATIVES DED						-	
	THER ITIONS	Cla	er, 7	5°							
СОМ	MENTS					5.					
		PUMP C	ODES: PP=Pe	eristaltic Pump	, GP= Submer	sible Grundfo	s Pump, IBP=	In-place Bladde	r Pump	offen.	
		BING MATERIAL	CODES: PP	Polypropylen	e, PE= Polyel	thylene, NP=	Non-inert Plas Date		Linea, II=I	enon	
1 R	eviewed By	·					Date	<u>'`L</u>			

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

			GR	COUNDY	VATER S	<u>SAMPLI</u>	NG LOG				
Client Name:	Н	azen and Sawye	r	Location:				Contact: Phone:			
ate Sampled	ا	32112		SAL Project #	12090	SIC		Project Name	S&GV	V Test Facility	SE #2
Vell Number		ΓΑ1-PZ-16-RS16		Sample ID	19			GPS LAT GPS LONG			
				P	URGING	DATA		0, 0 20,10			
WELL		WELL		Screen				Static Depth		PURGE	(PP) GP
DIAMETER (Inches)	1.0	CAPACITY (gal/ft)	0.04	interval (Feet)	UNK	То	UNK	to Water (Feet)	6.14	PUMP CODE	IBP
OTAL WELL EPTH (Feet)	17.25	REFERENCE ELEVATION (NGVD)		ELEV) WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	hnique: q Sub	merged Screen (1,1/4,1/4 Well) q Submer	rged Screen (1	EQ Volume, 3	s, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL		TAL DEPTH - ST	1/4 WELL	X WELL CAPI	CITY =	3 WELL	1		5 WELL		
VOLUME	0.4	EQUIPMENT VO	VOLUME	AD VOLUME +	TURING CAS	VOLUMES	/. 7 3		VOLUMES		
		EQUIPMENT VO		IF VOLUME 7	(TODING OAI	FLOW CELL	I I	,	EQUIPMEN		
PUMP VOLUME			TUBING LEGNTH			VOLUME			T VOLUME		
INITIAL TUBII IN WELL	-			NG LEGNTH L (FEET)		PURGE TIME START	0740	PURGE TIME END	0755	TOTAL PURGED	3.00
INST. ID	\times	><	\times	\times	SAL-SAM-63-	SAL-SAM - 6 5 2 <u>0/</u>	SAL-SAM-63 <u>O/</u>	SAL-SAM-55- 	SAL-SAM- 0 <u>f</u>	\geq	\geq
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (∆ <0.2)	SP COND (uS/cm) (∆ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe
0143	0.60	0.60	0.20	6.25	5.2	25.7	291.4	1.09	505	PLOUDY	עפען
0146	0.60	1.70		1	5.2	25.7	294.8	0.80	364	1	1
0149	0.60	1.80		<u> </u>	5.2	25.6	295.0	0.72	225		
075c	0.60	2.40			51	25.6	295.8	0.59	139		1
0755	0.40	3.00	/	/	5.1		296.5		42.0	,	
		apacity (gallons/				<u> </u>	7, 4"=0.65, 5/16" = 0.00			."5.88 .010: 5/8" =	0.016
TUBII	NG INSIDE DIA	A. CAPACITY (Ga	al./Ft.): 1/8" =		AMPLIN			4, 3/0 - 0.00	70, 172 - 0	.010, 010	0.010
CANADI ED DI	//COMPANY	I		<u> </u>	WINIL FILE		PLER(S)	T			
	/ / COMPANY INT)		SAL				ATURES:		$- \epsilon$		<u> </u>
	ERIAL CODE E ONE)	PP PE N	P (TL)T		E TUBING WELL (FEET)				UMP FLOW mL/min)		
SAMPLING INITIATED	0756	SAMPLING ENDED	0757	FIELD CLEANED	Y(N)	CLEANING STEPS					
FIELD	Y (N)	FILTER SIZE		DUPLICATE	Y (N)		LECTED BY SE FLOW?	Y N NA		COLLECTE	YNW
	RVATION O IN FIELD?	(μm) Y N N/A		SERVATIVES ODED		I KEVEK	01,1044				
WEA	THER		ar,	15°							
сом	MENTS										
		PUMP CO	DDES: PP=Pe	eristaltic Pump	, GP= Submer	sible Grundfo	s Pump, IBP=	In-place Bladde	r Pump	offen	
	TUI	BING MATERIAL	CODES: PP	= Polypropylen	e, PE= Polye	thylene, NP=	Non-inert Plas	tic, IL= [eflon	Lined, (1=T	enon	

Reviewed By:

Date:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
Cilent Name.	Hazeri and Sawyer	Location.		Phone:	
Date Sampled	082112	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-09-RS18	Sample ID	10	GPS LAT	
Well Number	IA1-F2-09-R316	Sample ID	<i>aO</i>	GPS LONG	

PURGING DATA

				P	URGING	DAIA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.07	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	6.74	PURGE PUMP CODE	€P GP IBP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
	<u> </u>	omerged Screen (EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	n (1 Well, 3,3	minutes)
	OLUME = (TO	TAL DEPTH - ST		x WELL CAPI	CITY =		1				
ONE WELL VOLUME			1/4 WELL VOLUME			3 WELL VOLUMES			5 WELL VOLUMES		
		EQUIPMENT VO	DLUME = PUN	P VOLUME +	(TUBING CA	PACITY X TUI	BING LEGNTH) + FLOW CEL	L VOLUME	,	
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL				NG LEGNTH _ (FEET)	•	PURGE TIME START	0758	PURGE TIME END	0813	TOTAL PURGED	1.50
INST. ID	\times	\times	\times	\times	SAL-SAM-63 <u>•</u> /	SAL-SAM - 6 %	SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Galions)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0801	0.30	0.30	0.10	6.92	5.le	26.4	360.4	0.85	704	prom	NONE
0804	0.30	0.60	1	/_	5.4	76.6	3612	0.70	MAX	1)
0807	0.30	0.90			5.5	76.6	363.6	0.48	MAX		
0810	0.30	61.20			5.5	24.4	363.2	0.39	659		
0813	0.30	1.50		1	5.5	24.6	347.2		521	- 1	1
		apacity (gallons/f					<u> </u>			'5.88	
TUBI	NG INSIDE DI	A. CAPACITY (Ga	al./Ft.): 1/8" =	0.0006; 3/16"	= 0.0014; 1	/4" = 0.0026;	5/16" = 0.00	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" =	0.016

CAMPLING DATA

		SAMPLIN	G DATA		
SAMPLED BY / COMPANY (PRINT)	SAL		SAMPLER(S) SIGNATURES:	A	ind
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT	SAMPLE TUBING LEGNTH IN WELL (FEET)		SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING OSI4	SAMPLING ENDED 08/5	FIELD Y N	CLEANING STEPS	Ii la la la la la la la la la la la la la	OOU SOTED!
FIELD Y	FILTER SIZE (μm)	DUPLICATE Y N	VOC COLLECTED BY REVERSE FLOW?		COLLECTED Y N N/A
PRESERVATION CHECKED IN FIELD?	I C V J NI NI/A I	SERVATIVES DDED			
WEATHER CONDITIONS	Clear, 7	7°			
COMMENTS					
	PUMP CODES: PP=Pe BING MATERIAL CODES: PP=	eristaltic Pump, GP= Submers	sible Grundfos Pump, IBP= I	n-place Bladder Pump tic. TL= Teflon Lined, TT= To	eflon
TUI Reviewed By		= Polypropylene, PE= Polyet	Date): 	
Reviewed By	· i				

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name	Hazen and Sawyer	Location:		Contact:	
Client Name:	nazen and Sawyer	Location.	<u></u>	Phone:	
Date Sampled	082112	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
	TA 4 D7 40 D040	Commis ID	21	GPS LAT	
Well Number	TA1-PZ-16-RS18	Sample ID	d/\	GPS LONG	

PURGING DATA Static Depth **PURGE** WELL WELL Screen PP) GP UNK to Water PUMP UNK To CAPACITY DIAMETER Interval IBP 0.04 p.74 1.0 CODE (gal/ft) (Feet) (Inches) (Feet) **TUBING GROUND WATER** TUBING REFERENCE TOTAL WELL DIAMETER CAPACITY **ELEVATION ELEVATION** DEPTH (Feet) (NGVD) (REFERENCE-STATIC) (Inches) (gal/ft) Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes) WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY = 5 WELL 1/4 WELL 3 WELL ONE WELL '. てち *0.*417 VOLUMES VOLUMES VOLUME **VOLUME** EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME **EQUIPMEN** FLOW CELL **PUMP TUBING LEGNTH VOLUME T VOLUME** VOLUME PURGE PURGE TIME TOTAL INITIAL TUBING LEGNTH FINAL TUBING LEGNTH TIME 0816 0831 **PURGED** 3,00 IN WELL (FEET) IN WELL (FEET) **END** START SAL-SAM-63-SAL-SAM -SAL-SAM-63 SAL-SAM-55-SAL-SAM-INST. 01 9 0/ 01 6**\$_0/** ID TOTAL SP COND TURBIDITY VOLUME Depth to Ηq **TEMP** DO **PURGE** COLOR ODOR VOLUME (NTUs) Water (SU) (oC) (uS/cm) (mg/L) **PURGED** TIME (Describe) (Describe) **PURGED** RATE (gpm) (**\(< 0.2**) $(\Delta < 0.2)$ (∆ <5%) (% SAT <20) (<20 NTU) (Feet) (Gallons) (Gallons) 6,92 435 CLOUPY JONE ケック 280.1 0,90 0.60 0.60 0. 7*0* 26.0 0819 `**>**5 5.3 279.0 0822 0.60 1-20 5,4 *-*02 O · (c() 274.9 1,80 0.60 0825 490 0.74 0828 0.60 0.28 478 3 ,00 54 275.2 26,0 0831 0.60

Well Capacity (gallons/foot): 0.75"=0.02 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; SAMPLING DATA

2"=0.16

1.25"=0.06,

						<u> </u>						
SAMPLED BY / COMPA (PRINT)	ANY		SAL			SAMPI SIGNA			>6	: -61		
TUBING MATERIAL CO (CIRCLE ONE)	ODE	PP PE NF	· Фп	SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PU RATE (m				
SAMPLING INITIATED 08 3	ح	SAMPLING ENDED	0833	FIELD CLEANED	(Z)	CLEANING STEPS						
FIELD Y		FILTER SIZE (μm)		DUPLICATE	(Z)		ECTED BY E FLOW?	Y N (N/A)		COLLECTED GH TRAP?	Y N	(AVA
PRESERVATION CHECKED IN FIELD		N N/A		ERVATIVES DED			_					
WEATHER CONDITIONS		Clea	r, 19	8°								
COMMENTS												
		PUMP CC	DES: PP=Pe	ristaltic Pump,	GP= Submers	ible Grundfos	Pump, IBP= Ir	n-place Bladder	Pump	-6		
	TUB	ING MATERIAL	CODES: PP=	Polypropylene	, PE= Polyeth	nylene, NP= N			ined, 11=10	etion		
Reviewed	d By:						Date	:				

3"=0.37,

4"=0.65

6"=1.47

5"=1.02

12"5.88

5/8" = 0.016

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA2-PZ-10-H5						
Matrix		Groundwater						
SAL Sample Number		1209014-01						
Date/Time Collected		08/21/12 11:40						
Collected by		Sean Schmidt						
Date/Time Received		08/21/12 14:35						
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		08/21/12 11:40	SAS
Water Temperature	°C	27.3	DEP FT1400	0.1	0.1		08/21/12 11:40	SAS
Specific conductance	umhos/cm	315	DEP FT1200	0.1	0.1		08/21/12 11:40	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/21/12 11:40	SAS
Inorganics	_							
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/23/12 12:27	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 09:30	08/23/12 12:00	CDB
Chloride	mg/L	20	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG
Nitrate+Nitrite (N)	mg/L	11	EPA 353.2	0.40	0.10		08/22/12 16:03	MMF
Phosphorous - Total as P	mg/L	0.034 1	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:00	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/22/12 09:30	08/22/12 11:40	AES
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 14:22	MMF
Sample Description		TA2-PZ-10-H5 DUP						
Matrix		Groundwater						
SAL Sample Number		1209014-02						
Date/Time Collected		08/21/12 11:45						
Collected by		Sean Schmidt						
Date/Time Received		08/21/12 14:35						
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		08/21/12 11:45	SAS
Water Temperature	°C	27.3	DEP FT1400	0.1	0.1		08/21/12 11:45	SAS
Specific conductance	umhos/cm	315	DEP FT1200	0.1	0.1		08/21/12 11:45	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/21/12 11:45	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/23/12 12:28	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 09:30	08/23/12 12:00	CDB
Chloride	mg/L	19	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG
Nitrate+Nitrite (N)	mg/L	10	EPA 353.2	0.40	0.10		08/22/12 16:06	MMF
Phosphorous - Total as P	mg/L	0.022 1	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:01	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/22/12 09:30	08/22/12 11:40	AES
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 15:10	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA2-PZ-10-J5						
Matrix		Groundwater						
SAL Sample Number		1209014-03						
Date/Time Collected		08/21/12 11:21						
Collected by		Sean Schmidt						
Date/Time Received		08/21/12 14:35						
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		08/21/12 11:21	SAS
Water Temperature	°C	27.7	DEP FT1400	0.1	0.1		08/21/12 11:21	SAS
Specific conductance	umhos/cm	512	DEP FT1200	0.1	0.1		08/21/12 11:21	SAS
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		08/21/12 11:21	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.015 I	EPA 350.1	0.040	0.009		08/23/12 12:30	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chemical Oxygen Demand	mg/L	17 I	EPA 410.4	25	10	08/23/12 09:30	08/23/12 12:00	CDB
Chloride	mg/L	52	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG
Nitrate+Nitrite (N)	mg/L	20	EPA 353.2	0.40	0.10		08/22/12 16:25	MMF
Phosphorous - Total as P	mg/L	0.34	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:03	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/22/12 09:30	08/22/12 11:40	AES
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 14:25	MMF
Sample Description		TA2-PZ-10-K5						
Matrix		Groundwater						
SAL Sample Number		1209014-04						
Date/Time Collected		08/21/12 11:02						
Collected by		Sean Schmidt						
Date/Time Received		08/21/12 14:35						
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		08/21/12 11:02	SAS
Water Temperature	°C	27.6	DEP FT1400	0.1	0.1		08/21/12 11:02	SAS
Specific conductance	umhos/cm	523	DEP FT1200	0.1	0.1		08/21/12 11:02	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/21/12 11:02	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.014 I	EPA 350.1	0.040	0.009		08/23/12 12:32	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chemical Oxygen Demand	mg/L	20 I	EPA 410.4	25	10	08/23/12 09:30	08/23/12 12:00	CDB
Chloride	mg/L	48	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG
Nitrate+Nitrite (N)	mg/L	19	EPA 353.2	0.40	0.10		08/22/12 16:30	MMF
Phosphorous - Total as P	mg/L	0.050	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:04	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/22/12 09:30	08/22/12 11:40	AES
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 14:27	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA2-PZ-10-L2						
Matrix		Groundwater						
SAL Sample Number		1209014-05						
Date/Time Collected		08/21/12 09:30						
Collected by		Sean Schmidt						
Date/Time Received		08/21/12 14:35						
Field Parameters								
pH	SU	4.2	DEP FT1100	0.1	0.1		08/21/12 09:30	SAS
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		08/21/12 09:30	SAS
Specific conductance	umhos/cm	289	DEP FT1200	0.1	0.1		08/21/12 09:30	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/21/12 09:30	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.011 I	EPA 350.1	0.040	0.009		08/23/12 12:33	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 09:30	08/23/12 12:00	CDB
Chloride	mg/L	14	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG
Nitrate+Nitrite (N)	mg/L	5.2	EPA 353.2	0.40	0.10		08/22/12 16:13	MMF
Phosphorous - Total as P	mg/L	0.13	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:05	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/22/12 09:30	08/22/12 11:40	AES
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 14:28	MMF
Sample Description		TA2-PZ-10-L3						
Matrix		Groundwater						
SAL Sample Number		1209014-06						
Date/Time Collected		08/21/12 09:43						
Collected by		Sean Schmidt						
Date/Time Received		08/21/12 14:35						
Field Parameters								
pH	SU	4.2	DEP FT1100	0.1	0.1		08/21/12 09:43	SAS
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		08/21/12 09:43	SAS
Specific conductance	umhos/cm	283	DEP FT1200	0.1	0.1		08/21/12 09:43	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/21/12 09:43	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.010 I	EPA 350.1	0.040	0.009		08/23/12 12:35	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 09:30	08/23/12 12:00	CDB
Chloride	mg/L	13	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG
Nitrate+Nitrite (N)	mg/L	5.7	EPA 353.2	0.40	0.10		08/22/12 16:15	MMF
Phosphorous - Total as P	mg/L	0.032 l	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:06	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/22/12 09:30	08/22/12 11:40	AES
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 14:30	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA2-PZ-10-L4						
Matrix		Groundwater						
SAL Sample Number		1209014-07						
Date/Time Collected		08/21/12 10:01						
Collected by		Sean Schmidt						
Date/Time Received		08/21/12 14:35						
Field Parameters								
рН	SU	4.3	DEP FT1100	0.1	0.1		08/21/12 10:01	SAS
Water Temperature	°C	27.1	DEP FT1400	0.1	0.1		08/21/12 10:01	SAS
Specific conductance	umhos/cm	548	DEP FT1200	0.1	0.1		08/21/12 10:01	SAS
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		08/21/12 10:01	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/23/12 14:54	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 09:30	08/23/12 12:00	CDE
Chloride	mg/L	47	EPA 300.0	0.20	0.050		08/22/12 16:29	JAC
Fluoride	mg/L	0.080	EPA 300.0	0.040	0.010		08/22/12 16:29	JAC
Nitrate (as N)	mg/L	21	EPA 300.0	0.04	0.01		08/22/12 16:29	JAC
Nitrate+Nitrite (N)	mg/L	19	EPA 353.2	0.40	0.10		08/22/12 16:17	MMF
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		08/22/12 16:29	JAC
Phosphorous - Total as P	mg/L	0.020 I	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:07	MMF
Sulfate	mg/L	64	EPA 300.0	0.60	0.20		08/22/12 16:29	JAC
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/22/12 09:30	08/22/12 11:40	AES
Total Kjeldahl Nitrogen	mg/L	2.4	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 14:32	MMI
Total Organic Carbon	mg/L	2.7	SM 5310B	1.0	0.50		08/26/12 11:11	ME
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	2.3	SM 5310B	1.0	0.50		08/28/12 16:37	ME
<u>Metals</u>								
Boron	mg/L	0.11	EPA 200.7	0.10	0.050	08/23/12 08:00	08/23/12 15:45	VWC
Calcium	mg/L	35	EPA 200.7	0.50	0.042	08/23/12 08:00	08/23/12 15:45	VWC
Iron	mg/L	0.035 I	EPA 200.7	0.10	0.020	08/23/12 08:00	08/23/12 15:45	VWC
Magnesium	mg/L	10	EPA 200.7	0.50	0.020	08/23/12 08:00	08/23/12 15:45	VWC
Manganese	mg/L	0.041	EPA 200.7	0.010	0.0010	08/23/12 08:00	08/23/12 15:45	VWC
Potassium	mg/L	11	EPA 200.7	0.050	0.010	08/23/12 08:00	08/23/12 15:45	VWC
Sodium	mg/L	35	EPA 200.7	0.50	0.13	08/23/12 08:00	08/23/12 15:45	VWC
Sample Description		TA2-PZ-10-L5						
Matrix		Groundwater						
SAL Sample Number		1209014-08						
Date/Time Collected		08/21/12 10:19						
Collected by		Sean Schmidt						
Date/Time Received		08/21/12 14:35						
Field Parameters								
pH	SU	4.2	DEP FT1100	0.1	0.1		08/21/12 10:19	SAS

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA2-PZ-10-L5						
Matrix		Groundwater						
SAL Sample Number		1209014-08						
Date/Time Collected		08/21/12 10:19						
Collected by		Sean Schmidt						
Date/Time Received		08/21/12 14:35						
Water Temperature	°C	27.4	DEP FT1400	0.1	0.1		08/21/12 10:19	SAS
Specific conductance	umhos/cm	504	DEP FT1200	0.1	0.1		08/21/12 10:19	SAS
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		08/21/12 10:19	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.025 I	EPA 350.1	0.040	0.009		08/23/12 14:56	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 09:30	08/23/12 12:00	CDB
Chloride	mg/L	46	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG
Nitrate+Nitrite (N)	mg/L	20	EPA 353.2	0.40	0.10		08/22/12 16:18	MMF
Phosphorous - Total as P	mg/L	0.11	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:08	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/22/12 09:30	08/22/12 11:40	AES
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 14:36	MMF
Sample Description		TA2-PZ-10-L6						
Matrix		Groundwater						
SAL Sample Number		1209014-09						
Date/Time Collected		08/21/12 10:38						
Collected by		Sean Schmidt						
Date/Time Received		08/21/12 14:35						
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		08/21/12 10:38	SAS
Water Temperature	°C	27.5	DEP FT1400	0.1	0.1		08/21/12 10:38	SAS
Specific conductance	umhos/cm	461	DEP FT1200	0.1	0.1		08/21/12 10:38	SAS
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		08/21/12 10:38	SAS
Inorganics								
Ammonia as N	mg/L	0.011 I	EPA 350.1	0.040	0.009		08/23/12 14:58	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 09:30	08/23/12 12:00	CDB
Chloride	mg/L	41	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG
Nitrate+Nitrite (N)	mg/L	19	EPA 353.2	0.40	0.10		08/22/12 16:19	MMF
Phosphorous - Total as P	mg/L	0.10	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:10	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/22/12 09:30	08/22/12 11:40	AES
Total Kjeldahl Nitrogen	mg/L	0.97	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 15:30	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA2-PZ-10-L6 DUP Groundwater 1209014-10 08/21/12 10:43 Sean Schmidt 08/21/12 14:35						
Field Parameters	011	1.0	DED ET4400	0.4	0.4		00/04/40 40 40	040
pH	SU °C	4.3	DEP FT1100 DEP FT1400	0.1	0.1		08/21/12 10:43	SAS
Water Temperature	-	27.5	DEP FT1400 DEP FT1200	0.1	0.1		08/21/12 10:43	SAS
Specific conductance	umhos/cm	461		0.1	0.1		08/21/12 10:43	SAS
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		08/21/12 10:43	SAS
<u>Inorganics</u>			ED4 050 4					
Ammonia as N	mg/L	0.013	EPA 350.1	0.040	0.009		08/23/12 15:00	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 09:30	08/23/12 12:00	CDB
Chloride	mg/L	42	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG
Nitrate+Nitrite (N)	mg/L	19	EPA 353.2	0.40	0.10		08/22/12 16:55	MMF
Phosphorous - Total as P	mg/L	0.095	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:11	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/22/12 09:30	08/22/12 11:40	AES
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 15:11	MMF
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA2-PZ-09-M4 Groundwater 1209014-11 08/21/12 08:53 Sean Schmidt 08/21/12 14:35						
Field Parameters								
pH	SU	5.4	DEP FT1100	0.1	0.1		08/21/12 08:53	SAS
Water Temperature	°C	26.5	DEP FT1400	0.1	0.1		08/21/12 08:53	SAS
Specific conductance	umhos/cm	509	DEP FT1200	0.1	0.1		08/21/12 08:53	SAS
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		08/21/12 08:53	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.024	EPA 350.1	0.040	0.009		08/23/12 15:02	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chloride	mg/L	6.9	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG
Nitrate+Nitrite (N)	mg/L	19	EPA 353.2	0.40	0.10		08/24/12 12:48	MMF
Total Kjeldahl Nitrogen	mg/L	7.8	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 15:12	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Sample Description TA2-PZ-16-M4 Matrix Groundwater SAL Sample Number 1209014-12 DaterTime Collected O8/21/12 09:11 Collected by Sean Schmidt DaterTime Received O8/21/12 14:35 Field Parameters PH SU 5.4 DEP FT1100 0.1 0.1 0.8/21/12 09:11 S. Specific conductance umhos/cm 228 DEP FT1400 0.1 0.1 0.8/21/12 09:11 S. Dissolved Oxygen mg/L 0.4 DEP FT1500 0.1 0.1 0.1 08/21/12 09:11 S. Dissolved The Sample Number 0.1 0.1 0.1 08/21/12 09:11 S. Dissolved The Sample Number 0.1 0.1 0.1 08/21/12 09:11 S. Dissolved Oxygen mg/L 0.4 DEP FT1500 0.1 0.1 0.1 08/21/12 09:11 S. Dissolved Oxygen mg/L 0.4 DEP FT1500 0.1 0.1 0.1 08/21/12 09:11 S. Dissolved Oxygen mg/L 0.022 I EPA 350.1 0.040 0.009 08/23/12 13:50 08/21/12 09:11 S. Dissolved Oxygen mg/L 0.03 EPA 350.1 0.01 0.005 08/29/12 13:52 08/29/12 13:54 MI Ammonia as N mg/L 0.022 I EPA 350.1 0.01 0.005 08/29/12 13:52 08/29/12 13:54 MI Ammonium as NH4 mg/L 0.03 EPA 350.1 0.01 0.005 08/29/12 13:52 08/29/12 13:54 MI Total Kjeldahl Nitrogen mg/L 1.7 EPA 353.2 0.04 0.01 0.02/24/12 11:55 MI Total Kjeldahl Nitrogen mg/L 0.61 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 14:41 MI Sample Description TA2-PZ-09-N7 Matrix Groundwater SAL Sample Number 1209014-13 Date/Time Received 08/21/12 14:35 Field Parameters PH SU 5.4 DEP FT1100 0.1 0.1 0.8/21/12 13:20 S. Collected by Sean Schmidt Date/Time Received 08/21/12 14:35 Field Parameters PH SU 5.4 DEP FT1100 0.1 0.1 0.1 08/21/12 13:20 S. Dissolved Oxygen mg/L 0.3 DEP FT1500 0.1 0.1 0.8/21/12 13:20 S. Dissolved Oxygen mg/L 0.3 DEP FT1500 0.1 0.1 0.1 08/21/12 13:20 S. Dissolved Oxygen mg/L 0.3 DEP FT1500 0.1 0.1 0.1 08/21/12 13:20 S. Dissolved Oxygen mg/L 0.01 I 0.1 0.005 08/29/12 13:52 08/29/12 13:52 08/29/12 13:52 08/29/12 13:52 08/29/12 13:52 08/29/12 13:52 08/29/12 13:52 08/29/12 13:54 MI Chloride mg/L 36 EPA 350.1 0.04 0.009 08/29/12 13:55 08/29/12 13:55 MI Chloride mg/L 36 EPA 350.1 0.04 0.00 0.005 08/29/12 13:52 08/29/12 13:55 MI Chloride mg/L 36 EPA 350.1 0.04 0.05 0.05 08/29/12 13:55 08/29/12 13:55 MI	Project Name		S&GW Tes	st Facility SE#2					
Martix	Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Matrix	Sample Description		TA2-PZ-16-M4						
Date/Time Collected Os/21/12 09-11 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35 Field Parameters pH SU 5.4 DEP FT1100 0.1 0.1 08/21/12 09-11 S. DEP FT1200 0.1 0.1 0.1 08/21/12 09-11 S. DEP FT1200 0.1 0.1 0.1 08/21/12 09-11 S. DEP FT1200 0.1 0.1 0.1 08/21/12 09-11 S. DEP FT1200 0.1 0.1 0.1 08/21/12 09-11 S. DEP FT1200 0.1 0.1 0.1 08/21/12 09-11 S. DEP FT1200 0.1 0.1 0.1 08/21/12 09-11 S. DEP FT1200 0.1 0.1 0.1 08/21/12 09-11 S. DEP FT1200 0.1 0.1 0.1 08/21/12 09-11 S. DEP FT1200 0.1 0.1 0.1 08/21/12 09-11 S. DEP FT1200 0.1 0.1 0.1 08/21/12 09-11 S. DEP FT1200 0.1 0.1 0.1 08/21/12 09-11 S. DEP FT1200 0.1 0.1 0.1 08/21/12 09-11 S. DEP FT1200 0.1 0.1 0.1 08/21/12 09-11 S. DEP FT1200 0.1 0.1 0.05 08/29/12 13-52 08/29/12 13-54 M. DEP FT1200 0.1 0.05 08/29/12 13-52 08/29/12 13-54 M. DEP FT1200 0.1 0.05 08/29/12 13-52 08/29/12 13-54 M. DEP FT1200 0.1 0.05 08/29/12 13-52 08/29/12 13-54 M. DEP FT1200 0.1 0.05 08/29/12 13-52 08/29/12 13-54 M. DEP FT1200 0.1 0.05 08/29/12 13-52 08/29/12 13-54 M. DEP FT1200 0.1 0.1 08/29/12 13-54 M. DEP FT1200 0.1 0.1 08/29/12 13-54 M. DEP FT1200 0.1 0.1 08/29/12 13-54 M. DEP FT1200 0.1 0.1 08/29/12 13-54 DEP FT1200 0.1 0.1 08/29/12 13-20 S. DEP FT1200 0.1 0.1 08/29/12 13-20 S. DEP FT1200 0.1 0.1 08/29/12 13-20 S. DEP FT1200 0.1 0.1 08/29/12 13-20 S. DEP FT1200 0.1 0.1 08/29/12 13-20 S. DEP FT1200 0.1 0.1 08/29/12 13-20 S. DEP FT1200 0.1 0.1 08/29/12 13-20 S. DEP FT1200 0.1 0.1 08/29/12 13-20 S. DEP FT1200 0.1 0.1 08/29/12 13-20 S. DEP FT1200 0.1 0.1 08/29/12 13-20 S. DEP FT1200 0.1 0.1 08/29/12 13-20 S. DEP FT1200 0.1 0.1 0.1 08/29/12 13-20 S. DEP FT1200 0.1 0.1 08/29/12 13-20 S. DEP FT1200 0.1 0.1 0.1 08/29/12 13-20 S. DEP FT1200 0.1 0.1 0.1 08/29/12 13-20 S. DEP FT1500 0.1 0.1 0.1 08/29/12 13-20 S. DEP FT1500 0.1 0.1 08/29/12 13-20 S. DEP FT1500 0.1 0.1 0.1 08/29/12 13-20 S. DEP FT1500 0.1 0.1 0.1 08/29/12 13-20 S. DEP FT1500 0.1 0.1 0.1 08/29/12 13-20 S. DEP FT1500 0.1 0.1 0.1 08/29/12 13-20 S. DEP FT1500 0.1 0.1 0.1 08/29/12 13-20 S. DEP FT1500 0.1 0.1 0.1 08/29/12 13-									
Sear Schmidt	SAL Sample Number		1209014-12						
Date/Time Received Se/21/12 14:35 Section Selection Sele	Date/Time Collected		08/21/12 09:11						
Pick SU 5.4 DEP FT1100 0.1 0.1 0.9/21/12 09:11 S. Dep Germonature C 26.2 DEP FT1400 0.1 0.1 0.9/21/12 09:11 S. Dep Germonature C 26.2 DEP FT1400 0.1 0.1 0.9/21/12 09:11 S. Dissolved Oxygen mg/L 0.4 DEP FT1500 0.1 0.1 0.9/21/12 09:11 S. Dissolved Oxygen mg/L 0.4 DEP FT1500 0.1 0.1 0.9/21/12 09:11 S. Dissolved Oxygen mg/L 0.02 EPA 350.1 0.040 0.009 0.9/23/12 15:04 MI Ammonius as N mg/L 0.02 EPA 350.1 0.040 0.009 0.9/23/12 15:04 MI Ammonium as NH4 mg/L 0.03 EPA 350.1 0.01 0.05 0.9/29/12 13:52 0.9/29/12 13:54 MI Oxidad Mirate Hinting (N) mg/L 1.7 EPA 350.2 0.04 0.01 0.05 0.9/29/12 13:54 MI Oxidad Mirate Hinting (N) mg/L 1.7 EPA 350.2 0.04 0.01 0.9/29/12 13:54 MI Oxidad Mirate Hinting (N) mg/L 1.7 EPA 350.2 0.04 0.01 0.9/29/12 13:54 MI Oxidad Mirate Hinting (N) mg/L 1.7 EPA 350.2 0.04 0.01 0.9/29/12 13:54 MI Oxidad Mirate Hinting (N) mg/L 1.7 EPA 350.2 0.04 0.01 0.9/21/12 13:20 0.9/29/12 13:54 MI Oxidad Mirate Hinting (N) mg/L 1.5 DEP FT1100 0.1 0.1 0.9/21/12 13:20 0.9/29/12 13:54 MI Oxidad Mirate Hinting (N) Mirate	Collected by		Sean Schmidt						
PH	Date/Time Received		08/21/12 14:35						
Water Temperature °C 26.2 DEP FT1400 0.1 0.1 08/21/12 09:11 S. Specific conductance umbos/cm 228 DEP FT1200 0.1 0.1 08/21/12 09:11 S. Specific conductance umbos/cm 228 DEP FT1500 0.1 0.1 08/21/12 09:11 S. Dissolved Oxygen mg/L 0.4 DEP FT1500 0.1 0.1 08/21/12 09:11 S. Dissolved Oxygen mg/L 0.04 0.09 08/23/12 15:04 MI	Field Parameters								
Specific conductance	pH	SU	5.4	DEP FT1100	0.1	0.1		08/21/12 09:11	SAS
Dissolved Oxygen	Water Temperature	°C	26.2	DEP FT1400	0.1	0.1		08/21/12 09:11	SAS
Increance Incr	Specific conductance	umhos/cm	228	DEP FT1200	0.1	0.1		08/21/12 09:11	SAS
Ammonia as N mg/L 0.022 I EPA 350.1 0.040 0.009 08/23/12 15:04 MI Ammonium as NH4 mg/L 0.03 EPA 350.1 0.01 0.005 08/29/12 13:52 08/29/12 13:54 MI Chloride mg/L 5.9 EPA 350.0 0.20 0.050 08/29/12 13:55 08/29/29/12 13:55 08/29/29/29/29/29/29/29/29/29/29/29/29/29/	Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/21/12 09:11	SAS
Ammonium as NH4 mg/L 0.03 EPA 350.1 0.01 0.005 08/29/12 13:52 08/29/12 13:54 MI Chloride mg/L 5.9 EPA 300.0 0.20 0.050 08/24/12 01:42 JJ Nitrate+Nitrite (N) mg/L 1.7 EPA 353.2 0.04 0.01 08/24/12 11:55 MI Total Kjeldahl Nitrogen mg/L 0.61 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 14:41 MI Total Kjeldahl Nitrogen TA2-PZ-09-N7 Matrix Groundwater SAL Sample Number 1209014-13 08/21/12 13:20 08/21/12 13:20 08/21/12 13:20 08/21/12 13:20 08/21/12 14:35 Field Parameters pH SU 5.4 DEP FT1100 0.1 0.1 08/21/12 13:20 S. Specific conductance umhos/cm 253 DEP FT1200 0.1 0.1 08/21/12 13:20 S. Specific conductance umhos/cm 253 DEP FT1500 0.1 0.1 08/21/12 13:20 S. Inorganics Ammonia as N mg/L 0.017 I EPA 350.1 0.01 0.09 08/21/12 13:52 08/29/12 1									
Chloride mg/L 5.9 EPA 300.0 0.20 0.050 08/24/12 01:42 J/ Milrate+Nitrite (N) mg/L 1.7 EPA 353.2 0.04 0.01 08/24/12 11:55 MT Total Kjeldahl Nitrogen mg/L 0.61 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 14:41 MT Sample Description TA2-PZ-09-N7 Groundwater SAL Sample Number 1209014-13 Date/Time Collected 08/21/12 13:20 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35 DEP FT1100 0.1 0.1 0.1 08/21/12 13:20 S. Specific conductance umhos/cm 253 DEP FT1200 0.1 0.1 08/21/12 13:20 S. Specific conductance umhos/cm 253 DEP FT1200 0.1 0.1 08/21/12 13:20 S. Dissolved Oxygen mg/L 0.3 DEP FT1500 0.1 0.1 08/21/12 13:20 S. Dissolved Oxygen mg/L 0.02 EPA 350.1 0.01 0.009 08/23/12 15:06 MT Ammonium as N1 mg/L 0.02 EPA 350.1 0.040 0.009 08/23/12 15:06 MT Ammonium as N14 mg/L 36 EPA 300.0 0.20 0.050 08/29/12 13:52 08/29/12 13:54 MT Chloride mg/L 36 EPA 300.0 0.20 0.050 08/29/12 13:52 08/29/12 13:54 MT Chloride mg/L 36 EPA 350.2 0.40 0.10 0.06 08/21/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MT Chloride mg/L 6.		_							MM
Nitrate+Nitrite (N) mg/L 1.7 EPA 353.2 0.04 0.01 08/24/12 11:55 M mg/L 0.61 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 14:41 M/S mg/L 0.61 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 14:41 M/S mg/L 0.61 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 14:41 M/S mg/L 0.61 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 14:41 M/S mg/L 0.01		_					08/29/12 13:52		MM
Total Kjeldahl Nitrogen mg/L 0.61 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 14:41 Mf Sample Description TA2-PZ-09-N7 Matrix Groundwater SAL Sample Number 1209014-13 Date/Time Received 08/21/12 13:20 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35 Field Parameters pH SU 5.4 DEP FT1100 0.1 0.1 08/21/12 13:20 S. Water Temperature °C 27.7 DEP FT1400 0.1 0.1 08/21/12 13:20 S. Specific conductance umhos/cm 253 DEP FT1200 0.1 0.1 08/21/12 13:20 S. Dissolved Oxygen mg/L 0.3 DEP FT1500 0.1 0.1 08/21/12 13:20 S. Inorganics Ammonia as N mg/L 0.017 I EPA 350.1 0.040 0.009 08/23/12 15:06 Mf Ammonium as NH4 mg/L 0.02 EPA 350.1 0.01 0.005 08/29/12 13:52 08/29/12 13:54 Mf Chloride mg/L 36 EPA 300.0 0.20 0.050 08/27/12 13:51 Mf Total Kjeldahl Nitrogen TA2-PZ-16-N7 Matrix Sample Description TA2-PZ-16-N7 Matrix Groundwater SAL Sample Number Date/Time Received 08/21/12 13:33 Sean Schmidt Date/Time Received 08/21/12 13:35		_							JA(
Sample Description Matrix Groundwater SAL Sample Number 1209014-13 Date/Time Collected 08/21/12 13:20 Collected by Sean Schmidt Date/Time Received SU 54 DEP FT1100 0.1 0.1 0.1 08/21/12 13:20 Symple Number Date/Time Received SU 54 DEP FT1100 0.1 0.1 08/21/12 13:20 Symple Number Ph SU 54 DEP FT1100 0.1 0.1 08/21/12 13:20 Symple Number Date/Time Received SU 54 DEP FT1100 0.1 0.1 08/21/12 13:20 Symple Number Date/Time Received SU 54 DEP FT1100 0.1 0.1 08/21/12 13:20 Symple Number Date/Time Received Received TA2-P2-16-N7 Matrix Sample Description Matrix Sample Description Matrix Sample Description Matrix Sample Description Matrix Sample Description Matrix Sample Number Date/Time Received Sam Schmidt Date/Time Received Sam Schmidt Date/Time Received Sam Schmidt Date/Time Received		_							MM
Matrix Groundwater SAL Sample Number 1209014-13 Date/Time Collected 08/21/12 13:20 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35 Field Parameters PH SU 5.4 DEP FT1100 0.1 0.1 08/21/12 13:20 S. Water Temperature °C 2.7.7 DEP FT1200 0.1 0.1 08/21/12 13:20 S. Specific conductance umhos/cm 253 DEP FT1200 0.1 0.1 08/21/12 13:20 S. Dissolved Oxygen mg/L 0.3 DEP FT1500 0.1 0.1 08/21/12 13:20 S. Inorganics Ammonia as N mg/L 0.017 I EPA 350.1 0.040 0.009 08/23/12 15:06 MI Ahmonium as NH4 mg/L 0.02 EPA 350.1 0.01 0.05 08/29/12 13:52 08/29/12 13:54 MI Chloride mg/L 36 EPA 350.1 0.01 0	Total Kjeldahl Nitrogen	mg/L	0.61	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 14:41	MM
SAL Sample Number Date/Time Collected O8/21/12 13:20 Collected by Date/Time Received O8/21/12 14:35 Field Parameters pH SU 5.4 DEP FT1100 0.1 0.1 0.1 08/21/12 13:20 S. Water Temperature °C 27.7 DEP FT1400 0.1 0.1 08/21/12 13:20 S. Specific conductance umhos/cm 253 DEP FT1200 0.1 0.1 08/21/12 13:20 S. Dissolved Oxygen mg/L 0.3 DEP FT1500 0.1 0.1 08/21/12 13:20 S. Dissolved Oxygen mg/L 0.017 I EPA 350.1 0.040 0.09 08/23/12 15:06 MI Ammonium as N Mg/L 0.002 EPA 350.1 0.010 0.005 08/29/12 13:52 08/29/12 13:54 MI Chloride Mg/L 36 EPA 300.0 0.20 0.050 08/29/12 13:52 08/29/12 13:54 MI Total Kjeidahl Nitrogen Mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MI Sample Description Matrix Groundwater SAL Sample Number Date/Time Collected 08/21/12 13:33 Collected by Sean Schmidt Date/Time Received	Sample Description		TA2-PZ-09-N7						
Date/Time Collected	Matrix		Groundwater						
Collected by O8/21/12 14:35 Field Parameters pH SU 5.4 DEP FT1100 0.1 0.1 0.8/21/12 13:20 S. Water Temperature °C 27.7 DEP FT1400 0.1 0.1 0.1 08/21/12 13:20 S. Specific conductance umhos/cm 253 DEP FT1200 0.1 0.1 0.1 08/21/12 13:20 S. Dissolved Oxygen mg/L 0.3 DEP FT1500 0.1 0.1 0.1 08/21/12 13:20 S. Inorganics Ammonia as N mg/L 0.017 I EPA 350.1 0.040 0.009 08/29/12 13:52 08/29/12 13:54 MI Chloride mg/L 36 EPA 300.0 0.20 0.050 08/29/12 13:52 08/29/12 16:47 J. Nitrate+Nitrite (N) mg/L 17 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MI Sample Description TA2-PZ-16-N7 Matrix Groundwater SAL Sample Number 1209014-14 Date/Time Received 08/21/12 13:33 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35	•		1209014-13						
Date/Time Received D8/21/12 14:35 Discrimination			08/21/12 13:20						
Field Parameters pH SU 5.4 DEP FT1100 0.1 0.1 0.8/21/12 13:20 S/ Water Temperature °C 27.7 DEP FT1400 0.1 0.1 0.1 08/21/12 13:20 S/ Specific conductance umhos/cm 253 DEP FT1200 0.1 0.1 0.8/21/12 13:20 S/ Dissolved Oxygen mg/L 0.3 DEP FT1500 0.1 0.1 0.1 08/21/12 13:20 S/ Inorganics Ammonia as N mg/L 0.017 I EPA 350.1 0.040 0.009 08/23/12 15:06 MI Ammonium as NH4 mg/L 0.02 EPA 350.1 0.01 0.05 08/29/12 13:52 08/29/12 13:54 MI Chloride mg/L 36 EPA 300.0 0.20 0.050 08/27/12 16:47 J/ Nitrate+Nitrite (N) mg/L 17 EPA 353.2 0.40 0.10 08/24/12 12:51 MI Total Kjeldahl Nitrogen mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MI Sample Description TA2-PZ-16-N7 Matrix Groundwater SAL Sample Number 1209014-14 Date/Time Collected 08/21/12 13:33 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35	•		Sean Schmidt						
SU 5.4 DEP FT1100 0.1 0.1 0.1 08/21/12 13:20 So.	Date/Time Received		08/21/12 14:35						
Water Temperature °C 27.7 DEP FT1400 0.1 0.1 08/21/12 13:20 S. Specific conductance umhos/cm 253 DEP FT1200 0.1 0.1 0.8/21/12 13:20 S. Dissolved Oxygen mg/L 0.3 DEP FT1500 0.1 0.1 0.8/21/12 13:20 S. Inorganics Ammonia as N mg/L 0.017 I EPA 350.1 0.040 0.009 08/23/12 15:06 MI Ammonium as NH4 mg/L 0.02 EPA 350.1 0.01 0.005 08/29/12 13:52 08/29/12 13:54 MI Chloride mg/L 36 EPA 300.0 0.20 0.050 08/27/12 16:47 J/ Nitrate+Nitrite (N) mg/L 17 EPA 353.2 0.40 0.10 08/24/12 12:51 MI Total Kjeldahl Nitrogen TA2-PZ-16-N7 Groundwater SAL Sample Number 1209014-14 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MI Sample Description TA2-PZ-16-N7 SAL Sample	Field Parameters								
Specific conductance umhos/cm 253 DEP FT1200 0.1 0.1 08/21/12 13:20 S. Dissolved Oxygen mg/L 0.3 DEP FT1500 0.1 0.1 0.8/21/12 13:20 S. Inorganics Ammonia as N mg/L 0.017 I EPA 350.1 0.040 0.009 08/23/12 15:06 MI Ammonium as NH4 mg/L 0.02 EPA 350.1 0.01 0.005 08/29/12 13:52 08/29/12 13:54 MI Chloride mg/L 36 EPA 350.1 0.01 0.005 08/29/12 13:52 08/29/12 16:47 J/ Nitrate+Nitrite (N) mg/L 17 EPA 353.2 0.40 0.10 08/24/12 12:51 MI Total Kjeldahl Nitrogen mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MI Sample Description TA2-PZ-16-N7 Groundwater 08/21/12 13:33 08/21/12 13:33 08/21/12 13:33 08/21/12 13:33 08/21/12 13:33 08/21/12 14:35 Date/Time Received 0	рН	SU	5.4	DEP FT1100	0.1	0.1		08/21/12 13:20	SAS
Dissolved Oxygen mg/L 0.3 DEP FT1500 0.1 0.1 0.1 08/21/12 13:20 S, Inorganics Ammonia as N mg/L 0.017 I EPA 350.1 0.040 0.009 08/23/12 15:06 MI Ammonium as NH4 mg/L 0.02 EPA 350.1 0.01 0.005 08/29/12 13:52 08/29/12 13:54 MI Chloride mg/L 36 EPA 300.0 0.20 0.050 08/27/12 16:47 J/ Nitrate+Nitrite (N) mg/L 17 EPA 353.2 0.40 0.10 08/24/12 12:51 MI Total Kjeldahl Nitrogen mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MI Sample Description TA2-PZ-16-N7 Groundwater SAL Sample Number 1209014-14 Date/Time Collected 08/21/12 13:33 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35	Water Temperature	°C	27.7	DEP FT1400	0.1	0.1		08/21/12 13:20	SAS
Inorganics	Specific conductance	umhos/cm	253	DEP FT1200	0.1	0.1		08/21/12 13:20	SAS
Ammonia as N mg/L 0.017 I EPA 350.1 0.040 0.009 08/23/12 15:06 MI Ammonium as NH4 mg/L 0.02 EPA 350.1 0.01 0.005 08/29/12 13:52 08/29/12 13:54 MI Chloride mg/L 36 EPA 300.0 0.20 0.050 08/27/12 16:47 J/ Nitrate+Nitrite (N) mg/L 17 EPA 353.2 0.40 0.10 08/24/12 12:51 MI Total Kjeldahl Nitrogen mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MI Sample Description TA2-PZ-16-N7 Matrix Groundwater SAL Sample Number 1209014-14 Date/Time Collected 08/21/12 13:33 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35	Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		08/21/12 13:20	SAS
Ammonium as NH4 mg/L 0.02 EPA 350.1 0.01 0.005 08/29/12 13:52 08/29/12 13:54 MI Chloride mg/L 36 EPA 300.0 0.20 0.050 08/29/12 13:52 08/27/12 16:47 J/ Nitrate+Nitrite (N) mg/L 17 EPA 353.2 0.40 0.10 08/24/12 12:51 MI Total Kjeldahl Nitrogen mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MI Sample Description TA2-PZ-16-N7 Matrix Groundwater SAL Sample Number 1209014-14 Date/Time Collected 08/21/12 13:33 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35			0.047.1	EDA 350.1	0.040	0.000		00/02/40 45:00	D 4 D 4
Chloride mg/L 36 EPA 300.0 0.20 0.050 08/27/12 16:47 J/ Nitrate+Nitrite (N) mg/L 17 EPA 353.2 0.40 0.10 08/24/12 12:51 MI Total Kjeldahl Nitrogen mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MI Sample Description TA2-PZ-16-N7 Matrix Groundwater SAL Sample Number 1209014-14 Date/Time Collected 08/21/12 13:33 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35		-					00/00/40 40 50		
Nitrate+Nitrite (N) mg/L 17 EPA 353.2 0.40 0.10 08/24/12 12:51 MI Total Kjeldahl Nitrogen mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MI Sample Description TA2-PZ-16-N7 Matrix Groundwater SAL Sample Number 1209014-14 Date/Time Collected 08/21/12 13:33 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35		_					08/29/12 13:52		MM
Total Kjeldahl Nitrogen mg/L 6.4 EPA 351.2 0.20 0.05 08/21/12 16:16 08/23/12 15:13 MI Sample Description TA2-PZ-16-N7 Matrix Groundwater SAL Sample Number 1209014-14 Date/Time Collected 08/21/12 13:33 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35		J							JA(
Sample Description TA2-PZ-16-N7 Matrix Groundwater SAL Sample Number 1209014-14 Date/Time Collected 08/21/12 13:33 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35		-					00/04/40 40 40		MM
Matrix Groundwater SAL Sample Number 1209014-14 Date/Time Collected 08/21/12 13:33 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35	Total Kjeldahl Nitrogen	mg/L	6.4	EPA 351.2	0.20	0.05	08/21/12 16:16	08/23/12 15:13	MM
SAL Sample Number Date/Time Collected O8/21/12 13:33 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35			TA2-PZ-16-N7						
Date/Time Collected 08/21/12 13:33 Collected by Sean Schmidt Date/Time Received 08/21/12 14:35			Groundwater						
Collected by Sean Schmidt Date/Time Received 08/21/12 14:35	•								
Date/Time Received 08/21/12 14:35									
05/21/12 1:1100									
Field Parameters	Date/Time Received		08/21/12 14:35						
	Field Parameters								

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description	Т	A2-PZ-16-N7						
Matrix	G	roundwater						
SAL Sample Number	1	209014-14						
Date/Time Collected	0	8/21/12 13:33						
Collected by	S	ean Schmidt						
Date/Time Received	0	8/21/12 14:35						
рН	SU	5.4	DEP FT1100	0.1	0.1		08/21/12 13:33	SAS
Water Temperature	°C	26.7	DEP FT1400	0.1	0.1		08/21/12 13:33	SAS
Specific conductance	umhos/cm	211	DEP FT1200	0.1	0.1		08/21/12 13:33	SAS
Dissolved Oxygen	mg/L	0.6	DEP FT1500	0.1	0.1		08/21/12 13:33	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.083	EPA 350.1	0.040	0.009		08/23/12 15:08	MMF
Ammonium as NH4	mg/L	0.11	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chloride	mg/L	6.8	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG
Nitrate+Nitrite (N)	mg/L	3.0	EPA 353.2	0.40	0.10		08/24/12 12:53	MMF
Total Kjeldahl Nitrogen	mg/L	0.80	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 10:55	MMF
Sample Description	т	A2-PZ-09-I7						
Matrix	G	Froundwater						
SAL Sample Number	1	209014-15						
Date/Time Collected	0	8/21/12 12:04						
Collected by	S	ean Schmidt						
Date/Time Received	0	8/21/12 14:35						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		08/21/12 12:04	SAS
Water Temperature	°C	27.7	DEP FT1400	0.1	0.1		08/21/12 12:04	SAS
Specific conductance	umhos/cm	274	DEP FT1200	0.1	0.1		08/21/12 12:04	SAS
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		08/21/12 12:04	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/23/12 15:14	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chloride	mg/L	15	EPA 300.0	0.20	0.050		08/24/12 01:42	JAG
Nitrate+Nitrite (N)	mg/L	6.4	EPA 353.2	0.40	0.10		08/24/12 12:55	MMF
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 10:57	MMF
Sample Description	т	A2-PZ-16-I7						
Matrix		Groundwater						
SAL Sample Number		209014-16						
Date/Time Collected		8/21/12 12:23						
Collected by	S	ean Schmidt						
Date/Time Received	0	8/21/12 14:35						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		08/21/12 12:23	SAS

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Laboratory Report

Project Name	S&GW Test Facility SE#2										
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву			
Sample Description		TA2-PZ-16-I7									
Matrix		Groundwater									
SAL Sample Number		1209014-16									
Date/Time Collected		08/21/12 12:23									
Collected by		Sean Schmidt									
Date/Time Received		08/21/12 14:35									
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		08/21/12 12:23	SAS			
Specific conductance	umhos/cm	214	DEP FT1200	0.1	0.1		08/21/12 12:23	SAS			
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		08/21/12 12:23	SAS			
Inorganics											
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/23/12 15:16	MMF			
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF			
Chloride	mg/L	7.2	EPA 300.0 EPA 353.2	0.20	0.050		08/24/12 01:42	JAG			
Nitrate+Nitrite (N)	mg/L	3.5		0.40	0.10	00/00/40 44:05	08/24/12 12:57	MMF			
Total Kjeldahl Nitrogen	mg/L	0.97	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 10:58	MMF			
Sample Description		TA2-PZ-09-L8									
Matrix		Groundwater									
SAL Sample Number		1209014-17									
Date/Time Collected		08/21/12 12:42									
Collected by		Sean Schmidt									
Date/Time Received		08/21/12 14:35									
Field Parameters											
pH	SU	5.9	DEP FT1100	0.1	0.1		08/21/12 12:42	SAS			
Water Temperature	°C	27.7	DEP FT1400	0.1	0.1		08/21/12 12:42	SAS			
Specific conductance	umhos/cm	419	DEP FT1200	0.1	0.1		08/21/12 12:42	SAS			
Dissolved Oxygen	mg/L	0.6	DEP FT1500	0.1	0.1		08/21/12 12:42	SAS			
<u>Inorganics</u>		0.057	EDA 250.4	0.040	0.000		00/00/40 45 40				
Ammonia as N	mg/L	0.057	EPA 350.1	0.040	0.009	00/00/40 40:50	08/23/12 15:19	MMF			
Ammonium as NH4	mg/L	0.07 19	EPA 350.1 EPA 300.0	0.01 0.20	0.005 0.050	08/29/12 13:52	08/29/12 13:54 08/24/12 01:42	MMF JAG			
Chloride	mg/L	19 7.4	EPA 353.2		0.050			MMF			
Nitrate+Nitrite (N) Total Kjeldahl Nitrogen	mg/L mg/L	2.9	EPA 353.2 EPA 351.2	0.40 0.20	0.10	08/23/12 11:25	08/24/12 13:00 08/27/12 11:44	MMF			
Total Njeldani Nitrogen	IIIg/L	2.9	LI A 00 1.2	0.20	0.03	00/23/12 11.23	00/27/12 11:44	IVIIVII			
Sample Description		TA2-PZ-16-L8									
Matrix		Groundwater									
SAL Sample Number		1209014-18									
Date/Time Collected		08/21/12 13:01									
Collected by Date/Time Received		Sean Schmidt 08/21/12 14:35									
		17.00									
Field Parameters	211		DED 574400	0.4			00/04/40 10 5 :				
pH	SU	5.6	DEP FT1100	0.1	0.1		08/21/12 13:01	SAS			
Water Temperature	°C	27.3	DEP FT1400	0.1	0.1		08/21/12 13:01	SAS			

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Laboratory Report

Dissolved Oxygen Inorganics Ammonia as N Ammonium as NH4 Chloride Nitrate+Nitrite (N) Total Kjeldahl Nitrogen Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance Dissolved Oxygen Inorganics	nhos/cm mg/L mg/L mg/L mg/L mg/L	Results * TA2-PZ-16-L8 Groundwater 1209014-18 08/21/12 13:01 Sean Schmidt 08/21/12 14:35 223 0.2 0.009 U 0.005 U 7.1 3.6 1.1 TA2-PZ-09-TU19	DEP FT1200 DEP FT1500 EPA 350.1 EPA 350.1 EPA 300.0 EPA 353.2 EPA 351.2	0.1 0.1 0.040 0.01 0.20 0.40 0.20	0.1 0.1 0.009 0.005 0.050 0.10	Prepared 08/29/12 13:52	08/21/12 13:01 08/21/12 13:01 08/23/12 15:21 08/29/12 13:54	SAS
Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Specific conductance Dissolved Oxygen Inorganics Ammonia as N Ammonium as NH4 Chloride Nitrate+Nitrite (N) Total Kjeldahl Nitrogen Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance Dissolved Oxygen Inorganics	nhos/cm mg/L mg/L mg/L mg/L mg/L	Groundwater 1209014-18 08/21/12 13:01 Sean Schmidt 08/21/12 14:35 223 0.2 0.009 U 0.005 U 7.1 3.6 1.1	EPA 350.1 EPA 350.1 EPA 300.0 EPA 353.2	0.1 0.040 0.01 0.20 0.40	0.1 0.009 0.005 0.050	08/29/12 13:52	08/21/12 13:01 08/23/12 15:21	SAS
Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Specific conductance um Dissolved Oxygen Inorganics Ammonia as N Ammonium as NH4 Chloride Nitrate+Nitrite (N) Total Kjeldahl Nitrogen Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance um Dissolved Oxygen Inorganics	nhos/cm mg/L mg/L mg/L mg/L mg/L	1209014-18 08/21/12 13:01 Sean Schmidt 08/21/12 14:35 223 0.2 0.009 U 0.005 U 7.1 3.6 1.1	EPA 350.1 EPA 350.1 EPA 300.0 EPA 353.2	0.1 0.040 0.01 0.20 0.40	0.1 0.009 0.005 0.050	08/29/12 13:52	08/21/12 13:01 08/23/12 15:21	SAS
Date/Time Collected Collected by Date/Time Received Specific conductance um Dissolved Oxygen Inorganics Ammonia as N Ammonium as NH4 Chloride Nitrate+Nitrite (N) Total Kjeldahl Nitrogen Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance Dissolved Oxygen Inorganics	nhos/cm mg/L mg/L mg/L mg/L mg/L	08/21/12 13:01 Sean Schmidt 08/21/12 14:35 223 0.2 0.009 U 0.005 U 7.1 3.6 1.1	EPA 350.1 EPA 350.1 EPA 300.0 EPA 353.2	0.1 0.040 0.01 0.20 0.40	0.1 0.009 0.005 0.050	08/29/12 13:52	08/21/12 13:01 08/23/12 15:21	SAS
Collected by Date/Time Received Specific conductance um Dissolved Oxygen Inorganics Ammonia as N Ammonium as NH4 Chloride Nitrate+Nitrite (N) Total Kjeldahl Nitrogen Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance Dissolved Oxygen Inorganics	nhos/cm mg/L mg/L mg/L mg/L mg/L mg/L	Sean Schmidt 08/21/12 14:35 223 0.2 0.009 U 0.005 U 7.1 3.6 1.1	EPA 350.1 EPA 350.1 EPA 300.0 EPA 353.2	0.1 0.040 0.01 0.20 0.40	0.1 0.009 0.005 0.050	08/29/12 13:52	08/21/12 13:01 08/23/12 15:21	SAS
Date/Time Received Specific conductance um Dissolved Oxygen Inorganics Ammonia as N Ammonium as NH4 Chloride Nitrate+Nitrite (N) Total Kjeldahl Nitrogen Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance Dissolved Oxygen Inorganics	nhos/cm mg/L mg/L mg/L mg/L mg/L	08/21/12 14:35 223 0.2 0.009 U 0.005 U 7.1 3.6 1.1	EPA 350.1 EPA 350.1 EPA 300.0 EPA 353.2	0.1 0.040 0.01 0.20 0.40	0.1 0.009 0.005 0.050	08/29/12 13:52	08/21/12 13:01 08/23/12 15:21	SAS
Specific conductance Dissolved Oxygen Inorganics Ammonia as N Ammonium as NH4 Chloride Nitrate+Nitrite (N) Total Kjeldahl Nitrogen Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance Dissolved Oxygen Inorganics	mg/L mg/L mg/L mg/L mg/L mg/L	223 0.2 0.009 U 0.005 U 7.1 3.6 1.1	EPA 350.1 EPA 350.1 EPA 300.0 EPA 353.2	0.1 0.040 0.01 0.20 0.40	0.1 0.009 0.005 0.050	08/29/12 13:52	08/21/12 13:01 08/23/12 15:21	SAS
Dissolved Oxygen Inorganics Ammonia as N Ammonium as NH4 Chloride Nitrate+Nitrite (N) Total Kjeldahl Nitrogen Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance Dissolved Oxygen Inorganics	mg/L mg/L mg/L mg/L mg/L	0.2 0.009 U 0.005 U 7.1 3.6 1.1	EPA 350.1 EPA 350.1 EPA 300.0 EPA 353.2	0.1 0.040 0.01 0.20 0.40	0.1 0.009 0.005 0.050	08/29/12 13:52	08/21/12 13:01 08/23/12 15:21	
Inorganics Ammonia as N Ammonium as NH4 Chloride Nitrate+Nitrite (N) Total Kjeldahl Nitrogen Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance Dissolved Oxygen Inorganics	mg/L mg/L mg/L mg/L mg/L	0.009 U 0.005 U 7.1 3.6 1.1	EPA 350.1 EPA 350.1 EPA 300.0 EPA 353.2	0.040 0.01 0.20 0.40	0.009 0.005 0.050	08/29/12 13:52	08/23/12 15:21	MMF
Ammonia as N Ammonium as NH4 Chloride Nitrate+Nitrite (N) Total Kjeldahl Nitrogen Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance Dissolved Oxygen Inorganics	mg/L mg/L mg/L mg/L	0.005 U 7.1 3.6 1.1	EPA 350.1 EPA 300.0 EPA 353.2	0.01 0.20 0.40	0.005 0.050	08/29/12 13:52		
Ammonium as NH4 Chloride Nitrate+Nitrite (N) Total Kjeldahl Nitrogen Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance Dissolved Oxygen Inorganics	mg/L mg/L mg/L mg/L	0.005 U 7.1 3.6 1.1	EPA 350.1 EPA 300.0 EPA 353.2	0.01 0.20 0.40	0.005 0.050	08/29/12 13:52		MMF
Chloride Nitrate+Nitrite (N) Total Kjeldahl Nitrogen Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance um Dissolved Oxygen Inorganics	mg/L mg/L mg/L	7.1 3.6 1.1	EPA 300.0 EPA 353.2	0.20 0.40	0.050	08/29/12 13:52	08/29/12 13:54	
Nitrate+Nitrite (N) Total Kjeldahl Nitrogen Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance um Dissolved Oxygen Inorganics	mg/L mg/L	3.6 1.1	EPA 353.2	0.40				MMF
Total Kjeldahl Nitrogen Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance Dissolved Oxygen Inorganics	mg/L	1.1			0.10		08/27/12 16:47	JAG
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance um Dissolved Oxygen Inorganics			EPA 351.2	0.20			08/24/12 13:02	MMF
Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance um Dissolved Oxygen Inorganics		TA2_D7_00_T1140			0.05	08/23/12 11:25	08/27/12 11:02	MMF
SAL Sample Number Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance um Dissolved Oxygen Inorganics		174-17-1013						
Date/Time Collected Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance um Dissolved Oxygen Inorganics		Groundwater						
Collected by Date/Time Received Field Parameters pH Water Temperature Specific conductance um Dissolved Oxygen Inorganics		1209014-19						
Date/Time Received Field Parameters pH Water Temperature Specific conductance um Dissolved Oxygen Inorganics		08/22/12 07:27						
Field Parameters pH Water Temperature Specific conductance um Dissolved Oxygen Inorganics		Sean Schmidt						
pH Water Temperature Specific conductance um Dissolved Oxygen Inorganics		08/22/12 15:00						
Water Temperature Specific conductance um Dissolved Oxygen Inorganics								
Specific conductance um Dissolved Oxygen <u>Inorganics</u>	SU	4.2	DEP FT1100	0.1	0.1		08/22/12 07:27	SAS
Dissolved Oxygen Inorganics	°C	26.8	DEP FT1400	0.1	0.1		08/22/12 07:27	SAS
Inorganics	nhos/cm	186	DEP FT1200	0.1	0.1		08/22/12 07:27	SAS
	mg/L	1.1	DEP FT1500	0.1	0.1		08/22/12 07:27	SAS
Ammonia as N	mg/L	0.017 I	EPA 350.1	0.040	0.009		08/23/12 15:23	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chloride	mg/L	3.8	EPA 300.0	0.20	0.050		08/27/12 16:47	JAG
Nitrate+Nitrite (N)	mg/L	5.7	EPA 353.2	0.40	0.10		08/24/12 13:04	MMF
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 11:03	MMF
Sample Description		TA2-PZ-16-TU19						
Matrix		Groundwater						
SAL Sample Number		1209014-20						
Date/Time Collected		08/22/12 07:46						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		08/22/12 07:46	SAS
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		08/22/12 07:46	SAS
	nhos/cm	206	DEP FT1200	0.1	0.1		08/22/12 07:46	SAS

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Laboratory Report

Project Name	S&GW Test Facility SE#2									
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву		
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA2-PZ-16-TU19 Groundwater 1209014-20 08/22/12 07:46 Sean Schmidt 08/22/12 15:00								
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		08/22/12 07:46	SAS		
Inorganics	Ü									
Ammonia as N	mg/L	0.060	EPA 350.1	0.040	0.009		08/23/12 15:24	MMF		
Ammonium as NH4	mg/L	0.08	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF		
Chloride	mg/L	6.5	EPA 300.0	0.20	0.050	00,20,12,10,02	08/27/12 16:47	JAG		
Nitrate+Nitrite (N)	mg/L	5.2	EPA 353.2	0.40	0.10		08/24/12 13:07	MMF		
Total Kjeldahl Nitrogen	mg/L	0.68	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 11:05	MMF		
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA2-PZ-09-TU21 Groundwater 1209014-21 08/22/12 08:09 Sean Schmidt 08/22/12 15:00								
Field Parameters										
рН	SU	4.4	DEP FT1100	0.1	0.1		08/22/12 08:09	SAS		
Water Temperature	°C	26.8	DEP FT1400	0.1	0.1		08/22/12 08:09	SAS		
Specific conductance	umhos/cm	170	DEP FT1200	0.1	0.1		08/22/12 08:09	SAS		
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/22/12 08:09	SAS		
Inorganics	_									
Ammonia as N	mg/L	0.038 I	EPA 350.1	0.040	0.009	00/00/40 40 =0	08/23/12 15:26	MMF		
Ammonium as NH4	mg/L	0.05	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF		
Chloride	mg/L	3.6	EPA 300.0 EPA 353.2	0.20	0.050 0.10		08/27/12 16:47	JAG MMF		
Nitrate+Nitrite (N) Total Kjeldahl Nitrogen	mg/L mg/L	4.2 0.76	EPA 353.2 EPA 351.2	0.40 0.20	0.10	08/23/12 11:25	08/24/12 13:08 08/27/12 11:07	MMF		
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received	yr.z	TA2-PZ-16-TU21 Groundwater 1209014-22 08/22/12 08:23 Sean Schmidt 08/22/12 15:00		V.EV	5.55	20.20.12 11.20	33.27.72 11.01			
Field Parameters										
рН	SU	5.0	DEP FT1100	0.1	0.1		08/22/12 08:23	SAS		
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		08/22/12 08:23	SAS		
Specific conductance	umhos/cm	192	DEP FT1200	0.1	0.1		08/22/12 08:23	SAS		
Dissolved Oxygen	mg/L	0.6	DEP FT1500	0.1	0.1		08/22/12 08:23	SAS		

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Project Name		S&GW Test						
Parameters		Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA2-PZ-16-TU21 Groundwater 1209014-22 08/22/12 08:23 Sean Schmidt 08/22/12 15:00						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.011 I	EPA 350.1	0.040	0.009		08/23/12 15:54	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	08/29/12 13:52	08/29/12 13:54	MMF
Chloride	mg/L	5.6	EPA 300.0	0.20	0.050		08/27/12 16:47	JAG
Nitrate+Nitrite (N)	mg/L	3.3	EPA 353.2	0.40	0.10		08/24/12 13:09	MMF
Total Kjeldahl Nitrogen	mg/L	0.96	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 11:08	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22126 - TOC prep										
Blank (BH22126-BLK1)					Prepared 8	Analyzed:	08/26/12			
Total Organic Carbon	0.50 U	1.0	0.50	mg/L						
_CS (BH22126-BS1)					Prepared 8	Analyzed:	08/26/12			
Total Organic Carbon	10.4	1.0	0.50	mg/L	10		104	90-110		
Matrix Spike (BH22126-MS1)		Source: 1	209174-01		Prepared 8	Analyzed:	08/26/12			
Total Organic Carbon	9.38	1.0	0.50	mg/L	10	ND	94	85-115		
Matrix Spike Dup (BH22126-MSD1)		Source: 1	209174-01		Prepared 8	Analyzed:	08/26/12			
Total Organic Carbon	9.58	1.0	0.50	mg/L	10	ND	96	85-115	2	10
Batch BH22143 - Digestion for	TKN by EPA	351.2								
Blank (BH22143-BLK1)					Prepared: (08/21/12 Ar	nalyzed: 08/	23/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
_CS (BH22143-BS1)					Prepared: (08/21/12 Ar	nalyzed: 08/	23/12		
Total Kjeldahl Nitrogen	2.48	0.20	0.05	mg/L	2.5		98	90-110		
Matrix Spike (BH22143-MS1)		Source: 1	209013-21		Prepared: (08/21/12 Ar	nalyzed: 08/	23/12		
Total Kjeldahl Nitrogen	3.49	0.20	0.05	mg/L	2.5	1.37	84	80-120		
Matrix Spike Dup (BH22143-MSD1)		Source: 1	209013-21		Prepared: (08/21/12 Ar	nalyzed: 08/	23/12		
Total Kjeldahl Nitrogen	3.94	0.20	0.05	mg/L	2.5	1.37	102	80-120	12	20
Batch BH22209 - COD prep										
Blank (BH22209-BLK1)					Prepared 8	Analyzed:	08/23/12			
Chemical Oxygen Demand										

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Analista	Desuit	DOL	MDL	1.1	Spike	Source	0/ DEO	%REC	DDD	RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22209 - COD prep										
LCS (BH22209-BS1)					Prepared 8	& Analyzed:	08/23/12			
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BH22209-MS1)		Source: 1	rce: 1209014-01 Prepared & Analyzed: 08/23/12				08/23/12			
Chemical Oxygen Demand	51	25	10	mg/L	50	ND	102	85-115		
Matrix Spike Dup (BH22209-MSD1	1)	Source: 1	209014-01		Prepared 8	& Analyzed:	08/23/12			
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115	9	32
Batch BH22211 - Ion Chromat	ography 300 0	Pren								
	ograpny cools				Danaga) A l l -	00/00/40			
Blank (BH22211-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
LCS (BH22211-BS1)					Prepared 8	& Analyzed:	08/22/12			
Fluoride	0.908	0.040	0.010	mg/L	0.90		101	85-115		
Orthophosphate as P	0.990	0.040	0.010	mg/L	0.90		110	85-115		
Sulfate	8.84	0.60	0.20	mg/L	9.0		98	85-115		
LCS Dup (BH22211-BSD1)					Prepared 8	& Analyzed:	08/22/12			
Orthophosphate as P	0.962	0.040	0.010	mg/L	0.90		107	85-115	3	200
Fluoride	0.921	0.040	0.010	mg/L	0.90		102	85-115	1	200
Sulfate	8.83	0.60	0.20	mg/L	9.0		98	85-115	0.1	200
Matrix Spike (BH22211-MS1)		Source: 1	209369-01		Prepared 8	k Analyzed:	08/22/12			
Fluoride	1.20	0.040	0.010	mg/L	0.90	0.280	102	85-115		
Orthophosphate as P	1.27	0.040	0.010	mg/L	0.90	0.361	101	85-115		
Sulfate	109 +O	0.60	0.20	mg/L	9.0	107	22	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

			MDI		Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22211 - Ion Chromato	graphy 300.0	Prep								
Matrix Spike (BH22211-MS2)		Source: 1	208997-05		Prepared 8	k Analyzed:	08/22/12			
Sulfate	142	0.60	0.20	mg/L	90	55.4	96	85-115		
Orthophosphate as P	8.65	0.040	0.010	mg/L	9.0	0.111	95	85-115		
Fluoride	9.02	0.040	0.010	mg/L	9.0	0.138	99	85-115		
Batch BH22216 - alkalinity										
Blank (BH22216-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22216-BS1)					Prepared 8	k Analyzed:	08/22/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22216-MS1)		Source: 1	209014-10		Prepared 8	k Analyzed:	08/22/12			
Total Alkalinity	110	8.0	2.0	mg/L	120	ND	86	80-120		
Matrix Spike Dup (BH22216-MSD1)		Source: 1	209014-10		Prepared 8	k Analyzed:	08/22/12			
Total Alkalinity	120	8.0	2.0	mg/L	120	ND	95	80-120	10	26
Batch BH22222 - Nitrate 353.2 b	y seal									
Blank (BH22222-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22222-BS1)					Prepared 8	k Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.822	0.04	0.01	mg/L	0.80		103	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22222 - Nitrate 353.2 b	y seal									
Matrix Spike (BH22222-MS1)		Source: 1	209013-12		Prepared 8	Analyzed: (08/22/12			
Nitrate+Nitrite (N)	18.9	0.40	0.10	mg/L	10	9.69	92	77-119		
Matrix Spike Dup (BH22222-MSD1)		Source: 1	209013-12		Prepared & Analyzed: 08/22/12					
Nitrate+Nitrite (N)	18.6	0.40	0.10	mg/L	10	9.69	90	77-119	1	20
Batch BH22301 - Ammonia by S	EAL									
Blank (BH22301-BLK1)					Prepared 8	Analyzed: (08/23/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22301-BS1)					Prepared 8	Analyzed: (08/23/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		97	90-110		
Matrix Spike (BH22301-MS1)		Source: 1209013-06			Prepared & Analyzed: 08/23/12					
Ammonia as N	0.47	0.040	0.009	mg/L	0.50	ND	93	90-110		
Matrix Spike Dup (BH22301-MSD1)		Source: 1	209013-06		Prepared & Analyzed: 08/23/12					
Ammonia as N	0.47	0.040	0.009	mg/L	0.50	ND	95	90-110	2	10
Batch BH22309 - Ion Chromatog	raphy 300.0	Prep								
Blank (BH22309-BLK1)					Prepared 8	Analyzed: (08/23/12			
Chloride	0.050 U	0.20	0.050	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22309-BS1)					Prepared 8	Analyzed: (08/23/12			
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115		
Chloride	2.94	0.20	0.050	mg/L	3.0		98	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22309 - Ion Chroma	tography 300.0	Prep								
LCS Dup (BH22309-BSD1)					Prepared 8	& Analyzed:	08/23/12			
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115	0.3	200
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115	0	200
Matrix Spike (BH22309-MS1)		Source: 1	1209443-02		Prepared 8	& Analyzed:	08/23/12			
Chloride	43.4 +O	0.20	0.050	mg/L	3.0	43.3	3	80-120		
Nitrate (as N)	3.98	0.04	0.01	mg/L	1.7	2.14	108	85-115		
Matrix Spike (BH22309-MS2)		Source:	1209511-01		Prepared 8	& Analyzed:	08/23/12			
Nitrate (as N)	1.80	0.04	0.01	mg/L	1.7	ND	106	85-115		
Chloride	14.5	0.20	0.050	mg/L	3.0	11.4	103	80-120		
Batch BH22310 - Ion Chroma	tography 300.0	Prep								
Blank (BH22310-BLK1)					Prepared 8	& Analyzed:	08/24/12			
Chloride	0.050 U	0.20	0.050	mg/L						
_CS (BH22310-BS1)					Prepared 8	& Analyzed:	08/24/12			
Chloride	2.97	0.20	0.050	mg/L	3.0		99	85-115		
LCS Dup (BH22310-BSD1)					Prepared 8	& Analyzed:	08/24/12			
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115	0.7	200
Duplicate (BH22310-DUP1)		Source:	1209014-17		Prepared 8	& Analyzed:	08/24/12			
Chloride	20.5	0.20	0.050	mg/L		19.2			7	10
Matrix Spike (BH22310-MS1)		Source:	1209014-06		Prepared 8	& Analyzed:	08/24/12			
Chloride	19.8	0.20	0.050	mg/L	6.0	13.4	107	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22311 - Digestion fo	r TP by EPA 36	5.2/SM4500	PE							
Blank (BH22311-BLK1)					Prepared:	08/23/12 Ar	nalyzed: 08	/24/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22311-BS1)					Prepared:	08/23/12 Ar	nalyzed: 08	/24/12		
Phosphorous - Total as P	0.834	0.040	0.010	mg/L	0.80		104	90-110		
Matrix Spike (BH22311-MS1)		Source: 1	209380-02		Prepared:	08/23/12 Ar	nalyzed: 08	/24/12		
Phosphorous - Total as P	1.57	0.040	0.010	mg/L	1.0	0.577	99	75-125		
Matrix Spike Dup (BH22311-MSD1	1)	Source: 1	209380-02		Prepared:	08/23/12 Ar	nalyzed: 08	/24/12		
Phosphorous - Total as P	1.68	0.040	0.010	mg/L	1.0	0.577	110	75-125	7	25
Batch BH22315 - Digestion fo	r TKN by EPA	351.2								
Blank (BH22315-BLK1)					Prepared:	08/23/12 Ar	nalyzed: 08	/27/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22315-BS1)					Prepared:	08/23/12 Ar	nalyzed: 08	/27/12		
Total Kjeldahl Nitrogen	2.61	0.20	0.05	mg/L	2.5		103	90-110		
Matrix Spike (BH22315-MS1)		Source: 1	209014-14		Prepared:	08/23/12 Ar	nalyzed: 08	/27/12		
Total Kjeldahl Nitrogen	3.62	0.20	0.05	mg/L	2.5	0.803	111	80-120		
Matrix Spike Dup (BH22315-MSD	1)	Source: 1	209014-14		Prepared:	08/23/12 Ar	nalyzed: 08	/27/12		
Total Kjeldahl Nitrogen	3.53	0.20	0.05	mg/L	2.5	0.803	108	80-120	3	20
Batch BH22327 - Ammonia by	SEAL									
Blank (BH22327-BLK1)					Prepared 8	& Analyzed:	08/23/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

A 1. 4 -	D H	DOL	MDL	11-24-	Spike	Source	0/ DEO	%REC	DDD	RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22327 - Ammonia b	y SEAL									
LCS (BH22327-BS1)					Prepared 8	k Analyzed:	08/23/12			
Ammonia as N	0.48	0.040	0.009	mg/L	0.50		96	90-110		
Matrix Spike (BH22327-MS1)		Source: 1	209356-07		Prepared 8	& Analyzed:	08/23/12			
Ammonia as N	0.47	0.040	0.009	mg/L	0.50	ND	95	90-110		
Matrix Spike Dup (BH22327-MSI	01)	Source: 1	209356-07		Prepared 8	k Analyzed:	08/23/12			
Ammonia as N	0.47	0.040	0.009	mg/L	0.50	ND	95	90-110	0.4	10
Batch BH22410 - Nitrate 353	2 by seal									
Blank (BH22410-BLK1)					Prepared 8	k Analyzed:	08/24/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22410-BS1)					Prepared 8	k Analyzed:	08/24/12			
Nitrate+Nitrite (N)	0.826	0.04	0.01	mg/L	0.80		103	90-110		
Matrix Spike (BH22410-MS1)		Source: 1	209356-07		Prepared 8	k Analyzed:	08/24/12			
Nitrate+Nitrite (N)	1.14	0.04	0.01	mg/L	1.0	0.130	101	77-119		
Matrix Spike Dup (BH22410-MSI	01)	Source: 1	209356-07		Prepared 8	k Analyzed:	08/24/12			
Nitrate+Nitrite (N)	1.10	0.04	0.01	mg/L	1.0	0.130	97	77-119	3	20
Batch BH22714 - Ion Chroma	atography 300.0	Prep								
Blank (BH22714-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Chloride	0.050 U	0.20	0.050	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22714 - Ion Chroma	tography 300.0	Prep								
LCS (BH22714-BS1)					Prepared 8	& Analyzed:	08/27/12			
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115		
LCS Dup (BH22714-BSD1)					Prepared 8	& Analyzed:	08/27/12			
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115	0	200
Matrix Spike (BH22714-MS1)		Source: '	1209367-01		Prepared 8	& Analyzed:	08/27/12			
Chloride	51.0 +O	0.20	0.050	mg/L	3.0	231	NR	80-120		
Matrix Spike (BH22714-MS2)		Source: '	209016-06		Prepared 8	& Analyzed:	08/27/12			
Chloride	24.6	0.20	0.050	mg/L	6.0	17.9	112	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Inorganic, Dissolved - Quality Control

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22124 - TOC prep										
Blank (BH22124-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BH22124-BS1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.2	1.0	0.50	mg/L	10		102	90-110		
Matrix Spike (BH22124-MS1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.0	1.0	0.50	mg/L	10	ND	100	85-125		
Matrix Spike Dup (BH22124-MSD1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	9.67	1.0	0.50	mg/L	10	ND	97	85-125	4	25

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Metals - Quality Control

Company Comp	Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Action	Batch BH22014 - Metals Prep	aration for EPA	Method 20	00.7							
odium 0.13 U 0.50 0.13 mg/L alaganese mg/L on 0.020 U 0.10 0.020 mg/L alaganese mg/L on 0.010 U mg/L on 0.010 mg/L on 0.010 mg/L on 0.010 mg/L on 0.050 u mg/L on 0.010 mg/L on 0.020 mg/L on 0.020 mg/L on 0.050 u mg/L on 0.050 u	Blank (BH22014-BLK1)					Prepared 8	k Analyzed:	08/23/12			
On	Calcium	0.042 U	0.50	0.042	mg/L						
Anganese	Sodium	0.13 U	0.50	0.13	mg/L						
Octassium	Iron	0.020 U	0.10	0.020	mg/L						
Agenesium	Manganese	0.0010 U	0.010	0.0010	mg/L						
coron 0.050 U 0.10 0.050 mg/L Prepared & Analyzed: 08/23/12 CS (BH22014-BS1) Prepared & Analyzed: 08/23/12 on 7.9 0.10 0.020 mg/L 8.0 98 85-115 langanese 0.39 0.010 0.0010 mg/L 0.40 97 85-115 acticum 20 0.50 0.042 mg/L 20 98 85-115 odium 23 0.50 0.050 0.013 mg/L 0.40 99 85-115 otassium 20 0.050 0.000 mg/L 0.40 99 85-115 datrix Spike (BH22014-MS1) Source: 1209312-01 mg/L Prepared & Analyzed: 08/23/12 Source: 1209312-01 Prepared & Analyzed: 08/23/12 oron 0.41 0.10 0.050 mg/L 0.40 ND 100 70-130 oron 8.0 0.41 0.050 mg/L 0.40 ND 100 70-130 acticum 100 0.50 0.042 mg/L 8.0 ND 100 70-130 acticum 100 0.50 0.042 mg/L 20 6.5 106 70-130 acticum 20 0.050 0.002 mg/L 20 0.35 102 70-130 acticum 20 0.000 0.000 mg/L <t< td=""><td>Potassium</td><td>0.010 U</td><td>0.050</td><td>0.010</td><td>mg/L</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Potassium	0.010 U	0.050	0.010	mg/L						
Prepared & Analyzed: 08/23/12	Magnesium	0.038 I	0.50	0.020	mg/L						
On	Boron	0.050 U	0.10	0.050	mg/L						
langanese 0.39 0.010 0.0010 mg/L 0.40 97 85-115 lacticium 20 0.50 0.042 mg/L 20 98 85-115 lacticium 23 0.50 0.13 mg/L 20 114 85-115 lacticium 23 0.50 0.13 mg/L 20 114 85-115 lacticium 20 0.050 0.010 mg/L 0.40 99 85-115 lacticium 20 0.050 0.010 mg/L 20 101 85-115 lacticium 20 0.50 0.020 mg/L 20 100 85-115 lacticium 20 0.50 0.020 mg/L 0.40 ND 101 70-130 lacticium 100 0.50 0.042 mg/L 20 85 84 70-130 lacticium 28 0.50 0.13 mg/L 20 85 84 70-130 lacticium 22 0.50 0.010 mg/L 20 0.35 102 70-130 lacticium 22 0.50 0.020 mg/L 20 1.9 99 70-130 lacticium 22 0.50 0.020 mg/L 20 1.9 99 70-130 lacticium 22 0.50 0.020 mg/L 20 1.9 99 70-130 lacticium 22 0.50 0.020 mg/L 20 1.9 99 70-130 lacticium 23 0.50 0.020 mg/L 20 1.9 99 70-130 lacticium 23 0.50 0.020 mg/L 20 1.9 99 70-130 lacticium 23 0.50 0.020 mg/L 20 1.9 99 70-130 lacticium 23 0.50 0.020 mg/L 20 3.0 98 70-130 lacticium 23 0.50 0.020 mg/L 20 3.0 98 70-130 lacticium 23 0.50 0.020 mg/L 20 3.0 98 70-130 lacticium 23 0.50 0.020 mg/L 20 3.0 98 70-130 lacticium 31 0.50 0.13 mg/L 20 60 105 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lacticium 31 0.50 0.042 mg/L 20 110 90 70-130 lac	LCS (BH22014-BS1)					Prepared 8	k Analyzed:	08/23/12			
Acticium 20 0.50 0.042 mg/L 20 98 85-115 oron 0.40 0.10 0.050 mg/L 0.40 99 85-115 oron 0.40 0.10 0.050 mg/L 0.40 99 85-115 orons 0.50 0.050 0.010 mg/L 20 101 85-115 orons 0.50 0.50 0.020 mg/L 20 101 85-115 orons 0.50 0.50 0.020 mg/L 20 101 85-115 orons 0.50 0.50 0.020 mg/L 20 100 85-115 orons 0.41 0.10 0.050 mg/L 0.40 ND 101 70-130 oron 0.41 0.10 0.050 mg/L 8.0 ND 100 70-130 orons 0.50 0.042 mg/L 20 85 84 70-130 orons 0.50 0.042 mg/L 20 85 84 70-130 orons 0.50 0.042 mg/L 20 85 84 70-130 orons 0.50 0.042 mg/L 20 85 84 70-130 orons 0.50 0.042 mg/L 20 85 84 70-130 orons 0.50 0.050 0.010 mg/L 20 0.35 102 70-130 orons 0.50 0.50 0.000 mg/L 20 0.35 102 70-130 orons 0.50 0.50 0.000 mg/L 20 0.35 102 70-130 orons 0.50 0.50 0.000 mg/L 20 1.9 99 70-130 orons 0.50 0.50 0.000 mg/L 20 1.9 99 70-130 orons 0.50 0.50 0.000 mg/L 20 1.9 99 70-130 orons 0.50 0.50 0.000 mg/L 20 1.9 99 70-130 orons 0.50 0.000 mg/L 20 0.50 0.000 mg/L 20 0.50 0.13 orons 0.50 0.000 mg/L 20 0.50 0.13 0 0.50 0.000 mg/L 20 0.50 0.13 0 0.50 0.50 0.000 mg/L 20 0.50 0.13 0 0.50 0.50 0.000 mg/L 20 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0	Iron	7.9	0.10	0.020	mg/L	8.0		98	85-115		
odium 23 0.50 0.13 mg/L 20 114 85-115 oron 0.40 0.10 0.050 mg/L 0.40 99 85-115 otassium 20 0.050 0.010 mg/L 20 101 85-115 latrix Spike (BH22014-MS1) Source: 1209312-01 Prepared & Analyzed: 08/23/12 oron 0.41 0.10 0.050 mg/L 0.40 ND 101 70-130 on 8.0 0.10 0.020 mg/L 8.0 ND 100 70-130 oalcium 100 0.50 0.042 mg/L 20 85 84 70-130 odium 28 0.50 0.13 mg/L 20 8.5 84 70-130 otassium 21 0.050 0.010 mg/L 20 0.35 102 70-130 langaesium 22 0.50 0.020 mg/L 20 0.3 70-130	Manganese	0.39	0.010	0.0010	mg/L	0.40		97	85-115		
oron 0.40 0.10 0.050 mg/L 0.40 99 85-115 otassium 20 0.050 0.010 mg/L 20 101 85-115 lagnesium 20 0.50 0.020 mg/L 20 100 85-115 latrix Spike (BH22014-MS1) Source: 1209312-01 Prepared & Analyzed: 08/23/12 oron 0.41 0.10 0.050 mg/L 0.40 ND 101 70-130 on 8.0 0.10 0.020 mg/L 8.0 ND 100 70-130 oalcium 100 0.50 0.042 mg/L 20 85 84 70-130 odium 28 0.50 0.13 mg/L 20 6.5 106 70-130 dagnesium 21 0.050 0.010 mg/L 20 1.9 99 70-130 langanese 0.39 0.010 0.001 mg/L 20 1.9 99 70-1	Calcium	20	0.50	0.042	mg/L	20		98	85-115		
otassium 20 0.050 0.010 mg/L 20 101 85-115 lagnesium 20 0.50 0.020 mg/L 20 100 85-115 latrix Spike (BH22014-MS1) Source: 1209312-01 Prepared & Analyzed: 08/23/12 oron 0.41 0.10 0.050 mg/L 0.40 ND 101 70-130 on 8.0 0.10 0.020 mg/L 20 85 84 70-130 alcicium 100 0.50 0.042 mg/L 20 85 84 70-130 odium 28 0.50 0.13 mg/L 20 6.5 106 70-130 daspesium 21 0.050 0.010 mg/L 20 0.35 102 70-130 langanese 0.39 0.010 0.0010 mg/L 20 1.9 99 70-130 langesium 23 0.50 0.020 mg/L 8.0 0.13 <t< td=""><td>Sodium</td><td>23</td><td>0.50</td><td>0.13</td><td>mg/L</td><td>20</td><td></td><td>114</td><td>85-115</td><td></td><td></td></t<>	Sodium	23	0.50	0.13	mg/L	20		114	85-115		
Source: 1209312-01 Prepared & Analyzed: 08/23/12 Prepare	Boron	0.40	0.10	0.050	mg/L	0.40		99	85-115		
Source: 1209312-01 Prepared & Analyzed: 08/23/12	Potassium	20	0.050	0.010	mg/L	20		101	85-115		
oron 0.41 0.10 0.050 mg/L 0.40 ND 101 70-130 on 8.0 0.10 0.020 mg/L 8.0 ND 100 70-130 aclicium 100 0.50 0.042 mg/L 20 85 84 70-130 odium 28 0.50 0.13 mg/L 20 6.5 106 70-130 otassium 21 0.050 0.010 mg/L 20 0.35 102 70-130 lagnesium 22 0.50 0.020 mg/L 20 1.9 99 70-130 latrix Spike (BH22014-MS2) Source: 1209313-01 Prepared & Analyzed: 08/23/12 on 7.8 0.10 0.020 mg/L 8.0 0.13 96 70-130 lagnesium 23 0.50 0.020 mg/L 20 3.0 98 70-130 oron 81 0.50 0.13 mg/L 20	Magnesium	20	0.50	0.020	mg/L	20		100	85-115		
on 8.0 0.10 0.020 mg/L 8.0 ND 100 70-130 calcium 100 0.50 0.042 mg/L 20 85 84 70-130 odium 28 0.50 0.13 mg/L 20 6.5 106 70-130 otassium 21 0.050 0.010 mg/L 20 0.35 102 70-130 dagnesium 22 0.50 0.020 mg/L 20 1.9 99 70-130 darrix Spike (BH22014-MS2) Source: 1209313-01 Prepared & Analyzed: 08/23/12 on 7.8 0.10 0.020 mg/L 8.0 0.13 96 70-130 dagnesium 23 0.50 0.020 mg/L 20 3.0 98 70-130 odium 81 0.50 0.13 mg/L 20 60 105 70-130 oron 0.47 0.10 0.050 mg/L 0.40	Matrix Spike (BH22014-MS1)		Source: 1	1209312-01		Prepared 8	k Analyzed:	08/23/12			
falcium 100 0.50 0.042 mg/L 20 85 84 70-130 odium 28 0.50 0.13 mg/L 20 6.5 106 70-130 otassium 21 0.050 0.010 mg/L 20 0.35 102 70-130 lagnesium 22 0.50 0.020 mg/L 20 1.9 99 70-130 langanese 0.39 0.010 0.0010 mg/L 0.40 ND 98 70-130 latrix Spike (BH22014-MS2) Source: 1209313-01 Prepared & Analyzed: 08/23/12 on 7.8 0.10 0.020 mg/L 8.0 0.13 96 70-130 lagnesium 23 0.50 0.020 mg/L 20 3.0 98 70-130 odium 81 0.50 0.13 mg/L 20 60 105 70-130 oron 0.47 0.10 0.050 mg/L 0.40 0.072 100 70-130 raicium 130 0.50	Boron	0.41	0.10	0.050	mg/L	0.40	ND	101	70-130		
odium 28 0.50 0.13 mg/L 20 6.5 106 70-130 otassium 21 0.050 0.010 mg/L 20 0.35 102 70-130 Iagnesium 22 0.50 0.020 mg/L 20 1.9 99 70-130 Iagnesium 0.39 0.010 0.0010 mg/L 0.40 ND 98 70-130 Iatrix Spike (BH22014-MS2) Source: 1209313-01 Prepared & Analyzed: 08/23/12 Ion 7.8 0.10 0.020 mg/L 8.0 0.13 96 70-130 Iagnesium 23 0.50 0.020 mg/L 20 3.0 98 70-130 odium 81 0.50 0.13 mg/L 20 60 105 70-130 oron 0.47 0.10 0.050 mg/L 0.40 0.072 100 70-130 ialcium 130 0.50 0.042 mg/L <td< td=""><td>Iron</td><td>8.0</td><td>0.10</td><td>0.020</td><td>mg/L</td><td>8.0</td><td>ND</td><td>100</td><td>70-130</td><td></td><td></td></td<>	Iron	8.0	0.10	0.020	mg/L	8.0	ND	100	70-130		
otassium 21 0.050 0.010 mg/L 20 0.35 102 70-130 lagnesium 22 0.50 0.020 mg/L 20 1.9 99 70-130 langanese 0.39 0.010 0.0010 mg/L 0.40 ND 98 70-130 latrix Spike (BH22014-MS2) Source: 1209313-01 Prepared & Analyzed: 08/23/12 on 7.8 0.10 0.020 mg/L 8.0 0.13 96 70-130 lagnesium 23 0.50 0.020 mg/L 20 3.0 98 70-130 odium 81 0.50 0.13 mg/L 20 60 105 70-130 oron 0.47 0.10 0.050 mg/L 0.40 0.072 100 70-130 ralcium 130 0.50 0.042 mg/L 20 110 90 70-130 ralcium 130 0.00 0.0010 mg/L	Calcium	100	0.50	0.042	mg/L	20	85	84	70-130		
Alagnesium 22 0.50 0.020 mg/L mg/L mg/L 20 1.9 99 70-130 Alarrix Spike (BH22014-MS2) Source: 1209313-01 Prepared & Analyzed: 08/23/12 On 7.8 0.10 0.020 mg/L 8.0 0.13 96 70-130 Alagnesium 23 0.50 0.020 mg/L 20 3.0 98 70-130 odium 81 0.50 0.13 mg/L 20 60 105 70-130 oron 0.47 0.10 0.050 mg/L 0.40 0.072 100 70-130 valcium 130 0.50 0.042 mg/L 20 110 90 70-130 alanganese 0.39 0.010 0.0010 mg/L 0.40 ND 98 70-130	Sodium	28	0.50	0.13	mg/L	20	6.5	106	70-130		
Source: 1209313-01 Prepared & Analyzed: 08/23/12 In the properties of the proper	Potassium	21	0.050	0.010	mg/L	20	0.35	102	70-130		
Source: 1209313-01 Prepared & Analyzed: 08/23/12 on 7.8 0.10 0.020 mg/L 8.0 0.13 96 70-130 lagnesium 23 0.50 0.020 mg/L 20 3.0 98 70-130 odium 81 0.50 0.13 mg/L 20 60 105 70-130 oron 0.47 0.10 0.050 mg/L 0.40 0.072 100 70-130 salcium 130 0.50 0.042 mg/L 20 110 90 70-130 langanese 0.39 0.010 0.0010 mg/L 0.40 ND 98 70-130	Magnesium	22	0.50	0.020	mg/L	20	1.9	99	70-130		
7.8 0.10 0.020 mg/L 8.0 0.13 96 70-130 dagnesium 23 0.50 0.020 mg/L 20 3.0 98 70-130 odium 81 0.50 0.13 mg/L 20 60 105 70-130 oron 0.47 0.10 0.050 mg/L 0.40 0.072 100 70-130 dalcium 130 0.50 0.042 mg/L 20 110 90 70-130 dangenese 0.39 0.010 0.0010 mg/L 0.40 ND 98 70-130	Manganese	0.39	0.010	0.0010	mg/L	0.40	ND	98	70-130		
Alagnesium 23 0.50 0.020 mg/L 20 3.0 98 70-130 odium 81 0.50 0.13 mg/L 20 60 105 70-130 oron 0.47 0.10 0.050 mg/L 0.40 0.072 100 70-130 Falcium 130 0.50 0.042 mg/L 20 110 90 70-130 Flanganese 0.39 0.010 0.0010 mg/L 0.40 ND 98 70-130	Matrix Spike (BH22014-MS2)		Source: 1	1209313-01		Prepared 8	k Analyzed:	08/23/12			
odium 81 0.50 0.13 mg/L 20 60 105 70-130 oron 0.47 0.10 0.050 mg/L 0.40 0.072 100 70-130 salcium 130 0.50 0.042 mg/L 20 110 90 70-130 salnganese 0.39 0.010 0.0010 mg/L 0.40 ND 98 70-130	Iron	7.8	0.10	0.020	mg/L	8.0	0.13	96	70-130		
oron 0.47 0.10 0.050 mg/L 0.40 0.072 100 70-130 calcium 130 0.50 0.042 mg/L 20 110 90 70-130 langanese 0.39 0.010 0.0010 mg/L 0.40 ND 98 70-130	Magnesium	23	0.50	0.020	mg/L	20	3.0	98	70-130		
alcium 130 0.50 0.042 mg/L 20 110 90 70-130 langanese 0.39 0.010 0.0010 mg/L 0.40 ND 98 70-130	Sodium	81	0.50	0.13	mg/L	20	60	105	70-130		
langanese 0.39 0.010 0.0010 mg/L 0.40 ND 98 70-130	Boron	0.47	0.10	0.050	mg/L	0.40	0.072	100	70-130		
	Calcium	130	0.50	0.042	mg/L	20	110	90	70-130		
otassium 27 0.050 0.010 mg/l 20 6.5 1.00 70-130	Manganese	0.39	0.010	0.0010	mg/L	0.40	ND	98	70-130		
510000011 11g/L 20 0.0 100 10-100	Potassium	27	0.050	0.010	mg/L	20	6.5	100	70-130		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22014 - Metals Pr Matrix Spike Dup (BH22014-M	•		10.7 209312-01		Prepared 8	& Analyzed:	08/23/12			
Manganese	0.39	0.010	0.0010	mg/L	0.40	ND	98	70-130	0.3	30
Sodium	27	0.50	0.13	mg/L	20	6.5	104	70-130	2	30
Boron	0.42	0.10	0.050	mg/L	0.40	ND	104	70-130	3	30
Calcium	100	0.50	0.042	mg/L	20	85	79	70-130	1	30
Iron	7.9	0.10	0.020	mg/L	8.0	ND	99	70-130	0.9	30
Potassium	20	0.050	0.010	mg/L	20	0.35	100	70-130	2	30
Magnesium	22	0.50	0.020	mg/L	20	1.9	100	70-130	1	30
Matrix Spike Dup (BH22014-M	SD2)	Source: 1	209313-01		Prepared 8	& Analyzed:	08/23/12			
Boron	0.47	0.10	0.050	mg/L	0.40	0.072	100	70-130	0.6	30
Calcium	130	0.50	0.042	mg/L	20	110	92	70-130	0.2	30
Potassium	27	0.050	0.010	mg/L	20	6.5	104	70-130	3	30
Magnesium	23	0.50	0.020	mg/L	20	3.0	100	70-130	1	30
Manganese	0.40	0.010	0.0010	mg/L	0.40	ND	99	70-130	0.6	30
Sodium	81	0.50	0.13	mg/L	20	60	105	70-130	0.02	30
Iron	8.1	0.10	0.020	mg/L	8.0	0.13	99	70-130	3	30

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209014

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

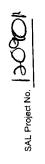
A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

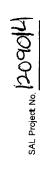
- Q Sample held beyond the accepted holding time.
- +O Matrix spike source sample was over the reccommended range for the method.

Finder



SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYNEW BOULE VARD, OLD SMAR, FL 34877 813-855-1844 fax 813-855-2218

Client Name										Contr	Contact / Phone:	i					
	Hazen	Hazen and Sawyer	10							1							
Project Name / Location																	
	S&GW	S&GW Test Facility SE#2	ity SE#2							-							
Samplers: (Signature)		7	\						PARAME	ER / CON	TAINER	PARAMETER / CONTAINER DESCRIPTION	Z.				
Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water	Wastewater dge SO-Soil Mater O-Other er					\$О ₄ Ох, СОD, ТР			F, NO ₃ , OP,	w	⁵os						ainers (Total
Samole Description	niption	Date	∍mi⊺	xirisM	Composite Grab	250™L P, H ₂ TKN, NH₄, N	1LP, Cool	250mLaG, C DOC 40mLaV, HC	TOC 1LP, Cool	SO₄ 250mL P, HI	250mL P, H ₂	1LP, Cool Cl		DO	Hd	Conductivity	No. of Conti
01 TA2-PZ-10-H5		2/1280	1/4/	ВW	×	-	-			<u> </u>				0.35	4.3 3/	3/5.4 27.3	
		_	5411	GW	×	-	-							0.35	4.33	75H27.	19
1			1121	GW	×	-	-			1				0.48	4.35	512.11.7	
04 TA2-PZ-10-K5			1105	GW	×		1							0.4/	4.35	513 17. (9
05 TA2-PZ-10-L2			0530	ΒW	×	-	-							0.40	4.7 28	289.024.9	
		_	5450	0W	×	-	-							040	4.228	287.2 26.9	
			1001	OW.	: ×	-		-	2	-				00.i 8	4.35	548 27.1	
1			1019	GW	×	-	-							08.0	4.2	27.4	_
09 TA2-PZ-10-L6			8501	ВW	×	-	-							0.72		4.7 461.171.5	7
1			7.25	GW	×	-	-							21.0	4.3 %	W. 127.5	,
1			2580	βW	×						-	-		0.72	5.4 5	508.7 24.5	10
		_	1140	GW	×						-	1		040	2 4.5	221.5 24.2	7
`	Date/Time: 1850	Received:	A	17	Date/Tim	!	0 5	S	Seal intact?			Z ×	8				
Relinquished:	Date/Time: 107	Reçeiyed:	7		Date/Time:	7)	72 PJ	Ť	Samples intact upon arrival?	ıpon arrival'	~	N N					
	082112	士)		٥	14-80	3 4	1 2	Received on ice? Temp.	7 Temp		Q N N					
Relinquished:	Date/Time:	Received:			Date/Time:			<u>«</u>	Proper preservatives indicated?	tives indica	ted?	≥ ⊘					
Relinquished:	Date/Time:	Received:			Date/Time			T	Rec'd within holding time?	ding time?		§ z √≻					
									Volatites rec'd w /out headspace?	/out heads	pace?	Ø z ≻	<u></u>				
Relinquished:	Date/Time:	Received:			Date/Time:	iii		Δ.	Proper containers used?	rs used?		N NA					1209014
Chain of Custody vis Rev.Date 11/19/01												Chain	Chain of Custody	>			



SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLD SMAR, FL 34677 813-855-1844 fax 813-855-2218

	Hazen and Sawyer							Contact / Phone:	hone:					
Project Name / Location	S&GW.Test Facility SF#2	c#:												
Samplers: (Signature)	3						MARAG	DARAMETER / CONTAINER DESCRIPTION		2				
Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water				709	^b ⊦					5				ers (Total
Sample Description	Date	Time	Matrix Composite	Grab 250mL P, H ₂ S	тки, иох, иі	1LP, Cool Cl					oa	Hq	Conductivity Temperature	No. of Contain
13 TA2-PZ-09-N7	082(12/3	320 G	GW	×		-					₹.°6	~	22.6 27.7	1
14 TA2-PZ-16-N7	()	1733 G	GW	×	_	-					20.UT	5.4	210.624.7	F-
15 TA2-PZ-09-17	2/	5 402	ΒW	×	-	-					0.30	5.2 21	T. 72 7.518	7
16 TA2-PZ-16-17	112	1223 G	ВW	×	-	-					0.77	5.274.24.9	4.226	.9
17 TA2-PZ-09-L8	12	147 G	GW	×	-	1					0,58	6.9 9	1.75 1.818	1
18 TA2-PZ-16-L8	13	1301 G	GW	×	_	1					0.20 5.6	1	272.8.211	γ.
19 TA2-PZ-09-TU19	522120727		GW	×	-	-					1.047.2		195.986.8	2
20 TA2-PZ-16-TU19	10	_	οw	×	-	-				***	2.52.0		200.00	10
21 TA2-PZ-09-TU21	0869		ВW	×	-	-					e. # e	4.4	872 6.24	<i>D</i> e
22 TA2-PZ-16-TU21	8	%% €	MS WS	×	-	-					D.Q.	5,0	192.525.4	ج
													+	
Containers Prepared/ Reinquished/Physical Containers (\$20 Received)	Received:		No.	Øate/Time:		0	Seal intact?	-	\ \ \ \ \ \ \	(P)			}	
6	Repeted		Dat	Date/Time:		747	Samples intac	Samples intact upon arrival?	S N					
	不不	,	7	18-3	0. x . 80	, ,	Received on ice? Temp	se? Temp	Q N N	\$				
Reinquished: 1435 Is	K	12	, Da	e/Time:	Date/Time: 1435	52	Proper preser	Proper preservatives indicated?	Q N NA	 ≸				
Relinquished:	Secritoria		Dat	e/Time:	Date/Time: (5-00	0	Rec'd within holding time?	olding time?	Co N NA					
Refinquished: Date/Time:	Received:		Dat	Oate/Time:	08-22-V)		Volatiles rec'd w/out hea	Volatiles rec'd w/out headspace? Proper containers used?	> 0 ²	 (5) §				
			-											1209014
Chain of Custody, kls Rev, Date 11/19/01									Chair	Chain of Custody				

Page 26 of 48

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

			GF	ROUNDV	VATER	SAMPL	ING LO	3			
Client Name:	ı	lazen and Sawye	er	Location:				Contact: Phone:			
Date Sampled	08	2112		SAL Project #	1265	1014		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA2-PZ-10-	1+5	Sample ID		01		GPS LAT GPS LONG			
				Р	URGING	3 DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	10.50	PURGE PUMP CODE	PP (BP
TOTAL WELL DEPTH (Feet)	14.80	REFERENCE ELEVATION (NGVD)		ELEV	O WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		bmerged Screen TAL DEPTH - ST			rged Screen (*	EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	O-1	72	1/4 WELL VOLUME			3 WELL VOLUMES	0.5	1 G	5 WELL VOLUMES		
		EQUIPMENT V	OLUME = PUN	//P VOLUME +	(TUBING CA	PACITY X TU	BING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	1124	PURGE TIME END	1139	TOTAL PURGED	1.50
INST. ID	\times	\times	\times	\times	SAL-SAM-63		SAL-SAM-63	SAL-SAM-55- O_Z	SAL-SAM-	\times	>
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describ
1127	0.30	0.30	0.10	10.68	4.3	27.5	318.8	1.28	760	Crospy	Non
1130	0.30	0.60	1		4.3	27.5	316.2	0.18	224	1	1
1133	0.30	0.90			4.3	27.4	315.0	0.60	114		
1136e	0.30	cs 7:50			4.3	27-3	315.2	0.49	87.8		T
-			1 1	ı — / — —							

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004;

Well Capacity (gallons/foot): 0.75"=0.02,

SAMPLING DATA

3"=0.37,

4"=0.65,

1.25"=0.06, 2"=0.16,

29.2

6"=1.47,

12"5.88

3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

0.35

5"=1.02,

				******	ODAIA	•				
SAMPLED BY / COMPA (PRINT)	ANY	SAL			SAMPI SIGNAT			₹:	2/	
TUBING MATERIAL CO (CIRCLE ONE)	PP PE N	Р ППТ	SAMPLE LEGNTH IN V				SAMPLE PU RATE (n			
SAMPLING INITIATED 1		1141	FIELD CLEANED	Y (N)	CLEANING STEPS					
FIELD Y (FILTER SIZE (μm)		DUPLICATE	Y (R)	VOC COLL REVERSI		Y N N/A		COLLECTED H TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD	? (Y)N N/A		ERVATIVES DED							
WEATHER CONDITIONS	Clear	, 84°								
COMMENTS										
	PUMP CC	DES: PP=Per	istaltic Pump, (GP= Submersi	ble Grundfos F	Pump, IBP= In	-place Bladder i	Pump		
	TUBING MATERIAL	CODES: PP=	Polypropylene,	PE= Polyeth	ylene, NP= No	on-inert Plastic	c, TL= Teflon Li	ned, TT= Te	flon	
Reviewed	By:					Date:				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

	·		G	KOUND	NAIER	SAMPL	ING LO	3			
Client Name:		Hazen and Sawye	er	Location:				Contact:		**	
Date Sampled	U	82112		SAL Project	1200	DIO		Phone: Project Name		W Test Facility	SE #2
Well Number		TA2-PZ-10-H5 DU	IP	Sample ID	100	03-		GPS LAT			
				P	URGINO	3 DATA		GPS LONG			
WELL	T	14511	T		OI COIIT	DAIA	-				
DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	10.50	PURGE PUMP CODE	€P GP IBP
TOTAL WELL DEPTH (Feet)	14.80	()		ELEV (REFEREN	D WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Ted WELL V	chnique: q Su	ubmerged Screen DTAL DEPTH - ST	(1,1/4,1/4 Well) g Subme	rged Screen (1	EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree		I minutes)
	T T	TIME DEL TITO GI		X VVELL CAP	ICITY =						
ONE WELL VOLUME	0.1	72	1/4 WELL VOLUME			3 WELL VOLUMES	0.5	16	5 WELL VOLUMES		
	r	EQUIPMENT V	DLUME = PUN	IP VOLUME +	(TUBING CA	PACITY X TUI	BING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL			FINAL TUBII IN WELL	NG LEGNTH . (FEET)		PURGE TIME START	1124	PURGE TIME END	1139	TOTAL PURGED	1.50
INST. ID	\times	><	\times	\times	SAL-SAM-63	SAL-SAM - 65- 0 /	SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	X
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1127	0.30	0.30	0.10	10.68	4.3	27.5	3/8.8	1.28	760	CLOUDY	NONE
211 30	0.30	0.60			4.3	27.5	316.2	0.78	224	1	\
1/33	0.30	0.90			4.3	27.4	315.0	0.60	114		
1136	0.30	1.20			4.7	27.3	3/5.2	0.49	87.8		
1139	0.30	1.50	1	- 1	4.3	21.3	315.4	0.35	79,2	/	1
		apacity (gallons/fo				6, 3"=0.37,	4"=0.65,	5"=1.02, 6"	=1.47, 12"	5.88	
TUBIN	IG INSIDE DIA	. CAPACITY (Ga	./Ft.): 1/8" = (4" = 0.0026;	5/16" = 0.004	3/8" = 0.006	i; 1/2" = 0.0)10; 5/8" = C	.016
				S/	MPLIN	G DATA	1				
SAMPLED BY (PRI			SA			SAMPI SIGNAT	LER(S) TURES:	5	1	~ 1	
TUBING MATE (CIRCLE		PP PE NP	TLπ	SAMPLE LEGNTH IN V				SAMPLE PU RATE (m			
SAMPLING INITIATED	1145	SAMPLING ENDED	1146	FIELD CLEANED	YN	CLEANING STEPS		**************************************			
FIELD FILTERED?	× (N)	FILTER SIZE (μm)		DUPLICATE	Y (N)	VOC COLL REVERSI		Y N NA	SEMI-VOLS (Y N (NA)
PRESERY CHECKED		⊘ N N/A	LIST PRESE ADD							I	
WEAT CONDI		Clear	,84°							-	
СОММ	ENTS										
		PUMP COD	ES: PP=Peris	staltic Pumn C	P= Submersil	ole Grundfoe	Pump IPD- In	place Bladder F)on		
	TUBI	NG MATERIAL C	ODES: PP= P	olypropylene.	PE= Polyethy	lene. NP= No	on-inert Plastic	TI = Teflon ! in	unip ed_TT=Toff	On.	
Re	viewed By:				, , , , , , , , , , , ,		Date:	renorr Ell	i i - i elli	OII	
							J 410.			_	

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Olivert Names	Hanna and Savage	Location		Contact:	
Client Name:	Hazen and Sawyer	Location:		Phone:	
Date Sampled	087/17	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
	T40 D7 40 15	Commis ID	^2	GPS LAT	
Well Number	TA2-PZ-10-J5	Sample ID	US	GPS LONG	
		Р	URGING DATA		
14-11	346-11	Canada		Static Donth	DUDCE

				P	URGING	DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	10.50	PURGE PUMP CODE	€P GP
TOTAL WELL DEPTH (Feet)				GROUND ELEVA (REFERENC	ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially St WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =									en (1 Well, 3,3	minutes)
ONE WELL VOLUME	Or I	72	1/4 WELL VOLUME			3 WELL VOLUMES	0.5	_	5 WELL VOLUMES		
	· · · · · · · · · · · · · · · · · · ·	EQUIPMENT VO	DLUME = PUN	IP VOLUME +	(TUBING CA	PACITY X TUI	BING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL	-		FINAL TUBII IN WELL	NG LEGNTH _ (FEET)		PURGE TIME START	1105	PURGE TIME END	1120	TOTAL PURGED	1.50
INST. ID	\times	\times	\times	\times	SAL-SAM-63	SAL-SAM - 6 3 - <u>0/</u>	SAL-SAM-63-	SAL-SAM-55-	SAL-SAM- 0	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1108	0.30	0.30	0.10	10.72	4.3	27.8	516	1.04	287	CLOUR	NONE
5111	0.30	0.60	1		4.3	27.8	514	0.80	212	1	
1/14	0.30	0.90	1		4.3	27.7	513	0.72	142		
1117	0,30	1.20			4.3	27.7	512	0.58	128		
1120	0.30	1.50		<u> </u>		27.7	512	0.48	108	/	
	Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88 TUBING INSIDE DIA, CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016										
TUBII	NG INSIDE DIA	A. CAPACITY (Ga	al./Ft.): 1/8" =	0.0006; 3/16"	= 0.0014; 1	/4" = 0.0026;	5/16" = 0.004	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" = 0	0.016

SAMPLING DATA

					<u> </u>	e'				
SAMPLED BY / COMPANY (PRINT)	SAL					LER(S) TURES:		~	S	
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (PP PE NP TL TT SAMPLE TUBING LEGNTH IN WELL (FEET)		SAMPLE PU RATE (m						
SAMPLING (12)		1/22	FIELD CLEANED	Y (N)	CLEANING STEPS					
FIELD Y N	FILTER SIZE (μm)		DUPLICATE	Y (N)		ECTED BY E FLOW?	Y N NA		COLLECTED GH TRAP?	N/A
PRESERVATION CHECKED IN FIELD?	(y) N N/A □		ERVATIVES DED							
WEATHER CONDITIONS										
COMMENTS										
				-place Bladder I						
	TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyet						c, TL= Teflon Li	ned, TT= T€	flon	
Reviewed By:						Date:				

110 BAYVIEW BOLLEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

			GR	COUNDY	VATER S	SAMPLI	NG LO	}			
Client Name:	H	lazen and Sawye	r	Location:				Contact:			·.
				SAL Project	1000	3611		Phone:	CRCW	V T4 Filik.	CE #2
Date Sampled		<u> 211286</u>		#	1900	<u> 1019 </u>		Project Name GPS LAT	S&GV	V Test Facility	SE #2
Well Number		TA2-PZ-10-K5		Sample ID		04		GPS LAT			
·	 -			P	URGING	DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	10.55	PURGE PUMP CODE	PP GI IBP
TOTAL WELL DEPTH (Feet)	14.80	REFERENCE ELEVATION (NGVD)		GROUND ELEV/ (REFEREN	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	hnique: q Sul	omerged Screen ((1,1/4,1/4 Well		ged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	OLUME = (10	17	1/4 WELL VOLUME		-	3 WELL VOLUMES	0.5	1	5 WELL VOLUMES		
		EQUIPMENT VO	DLUME = PUN	IP VOLUME +	(TUBING CAI	PACITY X TU	BING LEGNTH	l) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	1046	PURGE TIME END	1101	TOTAL PURGED	1.50
INST. ID	\times	\times	\times	\times	SAL-SAM-63-	SAL-SAM - 65 <u>67</u> /	SAL-SAM-63	SAL-SAM-55- <u>のと</u>	SAL-SAM-	\times	>
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describ
1049	0.30	0.30	0.10	10.70	4.3	27.6	529	1.28	73G	CLOIDY	No
1052	0.30	0.60			4.3	27.6	528	0.84	174		<u></u>
1055	0.30	0.90		<u> </u>	4-3	77.6	527	0.70	98-4		
1058	0.30	1.20			4.3	27.6	525	0.62	76.8		
1101	0.30	1.50			4.3	27.6	523	0.41	55.0	}	ļ
TUBU		Capacity (gallons/f					4"=0.65, 5/16" = 0.00		· · · · · · · · · · · · · · · · · · ·	"5.88 010; 5/8" =	0 016
					AMPLIN				., 0.		
	(/ COMPANY INT)		SA			SAMP	PLER(S) ATURES:		7		
	ERIAL CODE E ONE)	PP PE N	P TÜTT	1	TUBING WELL (FEET)			SAMPLE PU RATE (r			
SAMPLING INITIATED	1102	SAMPLING ENDED	1103	FIELD CLEANED	YN	CLEANING STEPS					
FIELD FILTERED?	Y (b)	FILTER SIZE (μm)	LIOT BBES	DUPLICATE	YN		LECTED BY SE FLOW?	Y N N/A		COLLECTED SH TRAP?	YN
	RVATION IN FIELD?	Y N N/A		ERVATIVES DED			****				

Revision Date 09/25/09

Reviewed By:

WEATHER CONDITIONS

COMMENTS

Clear, 84°

Date:

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump
TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

	r			COND		OAIIII L	110 20				
Client Name:		Hazen and Sawy	er	Location:	}			Contact: Phone:	ļ		
Date Sampled	0	82112		SAL Project	190	9014		Project Name	S&G	W Test Facility	SE #2
Well Number		TA2-PZ-10-HG	LZ	Sample ID	1	5		GPS LAT			
		52			PURGIN	G DATA		GPS LONG			
WELL		11.5			OKGIN	G DATA	<u> </u>				
DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	10.55	PURGE PUMP CODE	€P GP
TOTAL WELL DEPTH (Feet)	14.78	REFERENCE ELEVATION (NGVD)		ELEV	D WATER /ATION ICE-STATIC)			TUBING DIAMETER		TUBING CAPACITY	
Purge Tec	hnique: a Su	ubmerged Screen	(1 1/4 1/4 We	II) a Subme	rood Scroon /	1EO Valuma	0.014:	(Inches)	<u> </u>	(gal/ft)	
WELLV	OLUME = (TC	OTAL DEPTH - ST	ATIC DEPTH	× WELL CAP	PICITY =	TEQ Volume,	s, s Minutes)	q Partially Sul	merged Scre	en (1 Well, 3,3	3 minutes)
ONE WELL VOLUME	0.1		1/4 WELL VOLUME			3 WELL VOLUMES	0.5	07	5 WELL VOLUMES		
		EQUIPMENT V	OLUME = PUI	MP VOLUME 4	(TUBING CA	PACITY X TU	BING LEGNTH	l) + FLOW CEL	L VOLUME	L	
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL	NG LEGNTH (FEET)		FINAL TUBI IN WEL	NG LEGNTH L (FEET)		PURGE TIME START	0914	PURGE TIME END	०१८५	TOTAL PURGED	1.50
INST.	\times	TOTAL	\geq	\geq	SAL-SAM-63	SAL-SAM - 6 5 - <u>0/</u>	SAL-SAM-63	SAL-SAM-55- <u>OZ</u>	SAL-SAM- 0_	\times	\times
TIME	VOLUME PURGED (Gallons)	VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0917	0.30	0.30	0.10	11.04	4.4	27.0	284.8	0.90	134	CLOUPY	Nove
0920	0.30	0.40			4.4	27.0	285.0	17,0	122	1	1
0823	0.30	0.90		1	4.3						
0926	0.30					26.9	287.2	0.52	29.8	ļ	
०५८६	0-30	1.50	<u> </u>	(4.2	26.9	789.0	0.40	12.6	GLEAR	
		apacity (gallons/fo				6, 3"=0.37,	4"=0.65,	5"=1.02, 6"	=1.47. 12"	5.88	
TUBING	G INSIDE DIA	. CAPACITY (Gal	./Ft.): 1/8" = (0.0006; 3/16"	= 0.0014; 1/4	4" = 0.0026;	5/16" = 0.004	3/8" = 0.006			016
				SA	MPLIN	G DATA				10, 0,0 0	.010
SAMPLED BY / (PRIN			SAL			SAMPI SIGNAT	ER(S)		12	1	
TUBING MATE (CIRCLE		PP PE NP	Tî)rr	SAMPLE LEGNTH IN V	TUBING VELL (FEET)			SAMPLE PUI RATE (m		<u> </u>	
SAMPLING INITIATED	630	SAMPLING ENDED	0831	FIELD CLEANED	Y (N)	CLEANING					
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y(N)	VOC COLLI		Y N WAD	SEMI-VOLS (COLLECTED	
PRESERV CHECKED IN		ŶN N/A	LIST PRESE ADD			REVERSE	FLOW?		THROUGI	H TRAP?	Y N (NA)
WEATH		Clear, 78°									
СОММЕ	NTS										
		PUMP COD	ES: PP=Peris	taltic Pump G	P= Submereib	e Grundfoe D	umn IBD- I-	lace Bladder P			
	TUBIN	IG MATERIAL CO	DES: PP= P	olypropylene.	PE= Polyethyl	ene. NP= No	ump, IBP= In-p n-inert Plastic	TI = Teffon I :-	Jmp		
Revi	ewed By:				, , , , ,	1,	Date:	- L- renon Line	su, il= leflo	on	
							2410.				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

lient Name: i	Hazen and Sawyer	Location:		Contact:	
iicht Mairic.	riazon and davijo			Phone:	
ate Sampled	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
		0110	01.	GPS LAT	
Vell Number	TA2-PZ-10-L3	Sample ID	06	GPS LONG	

PURGING DATA Static Depth **PURGE** WELL WELL Screen PP) GP to Water PUMP CAPACITY Interval UNK То UNK DIAMETER 10.59 **IBP** 1,0 0.04 (Feet) CODE (gal/ft) (Feet) (Inches) **TUBING** TUBING GROUND WATER REFERENCE TOTAL WELL **ELEVATION** DIAMETER CAPACITY **ELEVATION** DEPTH (Feet) 14.80 (Inches) (gal/ft) (NGVD) (REFERENCE-STATIC) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes) Purge Technique: q Submerged Screen (1,1/4,1/4 Well) WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY = 5 WELL 3 WELL 1/4 WELL ONE WELL 0.505 0.168 VOLUMES **VOLUMES** VOLUME VOLUME EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME FLOW CELL **EQUIPMEN TUBING** PUMP **VOLUME** T VOLUME **LEGNTH VOLUME** PURGE FINAL TUBING LEGNTH INITIAL TUBING LEGNTH PURGE TIME TOTAL TIME 0942 0,90 IN WELL (FEET) IN WELL (FEET) *ዕ*የ 3 3 **END PURGED** START SAL-SAM-55-SAL-SAM-63 SAL-SAM -SAL-SAM-63 SAL-SAM-INST. 9 01 65-<u>01</u> 02 ID TOTAL TEMP SP COND TURBIDITY VOLUME Depth to pΗ DO COLOR **ODOR** PURGE VOLUME (SU) (uS/cm) (NTUs) TIME **PURGED** Water (oC) (mg/L) **PURGED** RATE (gpm) (Describe) (Describe) (A <5%) (% SAT <20) (<20 NTU) (Gallons) (Feet) $(\Delta < 0.2)$ $(\Delta < 0.2)$ (Gallons) 0,78 NONE 11.09 10.4 0936 0.10 4.2 74.9 2784 CLEAL 26.4 O-(00 4.2 0.62 280.6 10.8 26.9 40 4.2 283.こ

SAMPLING DATA

3"=0.37,

4"=0.65,

5/16" = 0.004;

5"=1.02,

3/8" = 0.006;

6"=1.47.

12"5.88

5/8" = 0.016

1/2" = 0.010;

1.25"=0.06, 2"=0.16,

SAMPLED BY / COMPAN (PRINT)	SAL		SAMPLER(S) SIGNATURES:		4
TUBING MATERIAL COD (CIRCLE ONE)	PP PE NP	SAMPLE TUBING LEGNTH IN WELL (FEET)		SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED 0843	SAMPLING ENDED 0944	FIELD Y N	CLEANING STEPS		
FIELD Y (N)	FILTER SIZE (μm)	DUPLICATE Y N	VOC COLLECTED BY REVERSE FLOW?	I V NI/NI/A B	COLLECTED Y N (N/A)
PRESERVATION CHECKED IN FIELD?	I L V NN N/A I	SERVATIVES DDED			
WEATHER CONDITIONS	Clear, 80°				
COMMENTS					
	PUMP CODES: PP=P	eristaltic Pump, GP= Submers	ible Grundfos Pump, IBP= Ir	n-place Bladder Pump	
	JBING MATERIAL CODES: PP	= Polypropylene, PE= Polyeth	ylene, NP= Non-inert Plasti	c, TL= Teflon Lined, TT= Te	flon
Reviewed B	y:		Date		

Revision Date 09/25/09

Well Capacity (gallons/foot): 0.75"=0.02,

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026;

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

		1 1		Contact:	
Client Name:	Hazen and Sawyer	Location:		Phone:	
Date Sampled	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
147 11 41	TAO DZ 40 L4	Sample ID	62	GPS LAT	
Well Number	TA2-PZ-10-L4	Sample ID	UT	GPS LONG	

PURGING DATA

WELL DIAMETER		WELL				•					
(Inches)	1.0	CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	10.35	PURGE PUMP CODE	⊕ GP IBP
TOTAL WELL DEPTH (Feet)	12.10	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH				x WELL CAPI	CITY =						
ONE WELL VOLUME	0.0		1/4 WELL VOLUME			3 WELL VOLUMES	0.2	L	5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBIN IN WELL (FINAL TUBII			PURGE TIME START	0945	PURGE TIME END	1000	TOTAL PURGED	1.50
INST. ID	> <	$>\!\!<$	\times	\times	SAL-SAM-63-	SAL-SAM - 63. 01	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0 <u>(</u>	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0848	c√30	0.30	G.10	10.48	4.3	76.9	546	1.08	132	CLOUN	NONE
0851	0.30	0.60			4.3	27.0	547	6.72	254		1
0954	0-30	0.90			4.3	27.0	549	0.58	77-4		
0957	0.30	10 10 B			4.3	27.0	547	0.30	50.9		
1000	0.30		1		4.3	27.1	548	0.18	130	CLEAR	1
Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88											
TUBING	G INSIDE DIA	. CAPACITY (Ga	l./Ft.): 1/8" =	0.0006; 3/16"	= 0.0014; 1/	4" = 0.0026;	5/16" = 0.004	; 3/8" = 0.00	6; 1/2" = 0.0	010; 5/8" = 0	0.016

SAMPLING DATA

SAMPLED BY (PRI			SAL			SAMPI SIGNA	` '	•	>/	<u> </u>	/	
TUBING MAT		PP PE N	· 11)π	SAMPLE LEGNTH IN V				SAMPLE PUMP FLOW RATE (mL/min)				
SAMPLING INITIATED	1001	SAMPLING ENDED	D09_	FIELD CLEANED	YW	CLEANING STEPS						
FIELD FILTERED?	YN	FILTER SIZE (μm)		DUPLICATE	YN	VOC COLL REVERS		Y N WA		COLLECTED H TRAP?	Y N	(N/A
PRESER CHECKED		ØN N/A		ERVATIVES DED								
WEAT CONDI	—	Clear	·, 80)								
СОММ	IENTS											
								-place Bladder				
		ING MATERIAL (CODES: PP=	Polypropylene,	PE= Polyeth	ylene, NP= No	on-inert Plastic	c, TL= Teflon L	ned, TT= Te	flon		
Re	viewed By:						Date:					17.11.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

			<u> </u>		.,	O7 11111					
Client Name:		lazen and Sawye	r	Location:				Contact: Phone:			
Date Sampled	C	782112	-	SAL Project #	1909	1014		Project Name	S&GV	N Test Facility	SE #2
Well Number		TA2-PZ-10-L5		Sample ID		\ <u>\</u>		GPS LAT			
· · · · · · · · · · · · · · · · · · ·				D	URGINO	DATA		GPS LONG			
	,				OKGIN	DAIA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	10.54	PURGE PUMP CODE	GP IBP
TOTAL WELL DEPTH (Feet)	14.75	REFERENCE ELEVATION (NGVD)		ELEV	O WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gai/ft)	
		bmerged Screen) q Subme	rged Screen (1	EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scre	,. ,	minutes)
-	OLUME = (TO	TAL DEPTH - ST		x WELL CAPI	ICITY =			<u> </u>			
ONE WELL VOLUME			1/4 WELL VOLUME			3 WELL			5 WELL		
VOLUME	ŀ	EQUIPMENT VO		ID VOLUME 4	/TUDING CA	VOLUMES	PINC LECNIT	A) + ELOWCEL	VOLUMES	<u> </u>	
	i -	EQUIPMENT V	JEUNE - FUN	I VOLUME T	(TOBING CA	I	DING LEGIT) + FLOW CEL	L VOLUME	1	
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	1003	PURGE TIME END	1017	TOTAL PURGED	1.50
INST. ID	\times	><	\times	\times	SAL-SAM-63	SAL-SAM - 65- <u>0/</u>	SAL-SAM-63 <u>0</u> /	SAL-SAM-55- つこ	SAL-SAM- 0 <u>/</u>	\times	> <
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1004	0.30	0.30	0.10	10.78	4.2	27.4	500	1.60	198	CLOUDY	אסאד
1009	0.30				4.2	77.4	501	1.24	170		
1012	6.30	0.90			4.2	77.4	502	0.98	162		
1015	0.30	1.20			4.2	27.4	504	0.58	124		
1018	0.30	1.50		<i>[</i>	4.2	27.4	504	0.80	111		1
	Well C	apacity (gallons/f	oot): 0.75"=0.	02, 1.25"=0	0.06, 2"=0.1	6, 3"=0.37	4"=0.65		"=1.47, 12	"5.88	
TUBIN	NG INSIDE DIA	A. CAPACITY (Ga	l./Ft.): 1/8" =	0.0006; 3/16"	' = 0.0014; 1.	/4" = 0.0026;	5/16" = 0.004	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" = (0.016
				S	AMPLIN	G DATA	1			7711	
SAMPLED BY (PRI			SAC	-			PLER(S) TURES:		~	2a.6	
TUBING MAT (CIRCL	ERIAL CODE E ONE)	PP PE NE	РФп		ETUBING WELL (FEET)			SAMPLE PU RATE (r	· · · · · · · · · · · · · · · · · · ·		
SAMPLING INITIATED	1019	SAMPLING ENDED	1020	FIELD CLEANED	YN	CLEANING STEPS				· · · · · · · · · · · · · · · · · · ·	
FIELD FILTERED?	YN	FILTER SiZE (μm)		DUPLICATE	Y (N)		LECTED BY SE FLOW?	Y N N/A	SEMI-VOLS THROUG	COLLECTED 3H TRAP?	YNN
PRESER CHECKED		Y) N N/A		ERVATIVES DED							
WEAT CONDI		Clear	1829	>							
COMM	IENTS										
		PUMP CO	DES: PP=Per	istaltic Pump,	GP= Submers	ible Grundfos	Pump, IBP= In	-place Bladder	Pump	······································	
	TUB	ING MATERIAL (CODES: PP=	Polypropylene	, PE= Polyeth	ylene, NP= N	Ion-inert Plasti	c, TL= Teflon L	ined, TT= Te	flon	
Re	eviewed By:						Date:			*	

Revision Date 09/25/09

Date:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:						
Cilent Name.	riazeri and Sawyer	Location.		Phone:						
Date Sampled	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2					
Well Number	TA2-PZ-10-L6	Sample ID	60	GPS LAT						
Well Number TA2-PZ-10-L6 Sample ID GPS LONG										
PURGING DATA										

PURGE WELL Static Depth WELL Screen Ph GP DIAMETER CAPACITY Interval UNK То UNK to Water **PUMP** IBP. 1.0 0.04 10.55 (gal/ft) CODE (Feet) (Feet) (Inches) **GROUND WATER** REFERENCE **TUBING TUBING** TOTAL WELL **ELEVATION ELEVATION** DIAMETER CAPACITY DEPTH (Feet) (NGVD) (REFERENCE-STATIC) (Inches) (gal/ft) Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1 EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes) WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY = 1/4 WELL 3 WELL 5 WELL ONE WELL 0.506 1(28 VOLUME VOLUMES **VOLUMES** VOLUME EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME FLOW CELL **PUMP TUBING EQUIPMEN** VOLUME **LEGNTH** T VOLUME VOLUME PURGE INITIAL TUBING LEGNTH FINAL TUBING LEGNTH **PURGE TIME TOTAL** TIME IN WELL (FEET) IN WELL (FEET) 1022 1037 **PURGED** 50 **END** START SAL-SAM-63 INST. SAL-SAM -SAL-SAM-63 SAL-SAM-55 SAL-SAM-Ø/ 65-**0/** 01 02 TOTAL **VOLUME** Depth to pΗ **TEMP** SP COND DO TURBIDITY PURGE VOLUME COLOR ODOR **PURGED** (SU) TIME Water (oC) (uS/cm) (mg/L) (NTUs) **PURGED** RATE (gpm) (Describe) (Describe) (Gallons) (<20 NTU) (Feet) $(\Delta < 0.2)$ (∆ <0.2) (Δ <5%) (% SAT <20) (Gallons) 0.30 0.10

4.3

4.3

4.3

4.

10.70

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; SAMPLING DATA

0.30

0-60

0.90

Well Capacity (gallons/foot): 0.75"=0.02,

0.30

0.30

*(*ያ-ኔሪ)

1.25"=0.06, 2"=0.16, 4"=0.65 5"=1.02, 6"=1.47 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010;

3"=0.37.

470.5

465.4

ዛሬንብ

1.08

0.80

148

10Y

95.2

80.6

5.7

CLOUP

5/8" = 0.016

NONE

		SAMI	LIII	DAIA					
SAMPLED BY / COMPANY (PRINT)	SAL	•		SAMPL SIGNAT	٠,	-		- N	
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (T)TT	SAMPLE TUBIN LEGNTH IN WELL (SAMPLE PL RATE (n			
SAMPLING 1038	SAMPLING ENDED /03 ?	FIELD YO	(D)	CLEANING STEPS				· · · · · · · · · · · · · · · · · · ·	
FIELD Y N	FILTER SIZE (μm)	DUPLICATE Y	(3)	VOC COLLI REVERSE		YNM		COLLECTED , SH TRAP?	N N/A
PRESERVATION CHECKED IN FIELD?	Ι / Y/ N N/Δ Ι ΄	SERVATIVES DED						•	
WEATHER CONDITIONS	Clear, 87°	»							
COMMENTS									
	PUMP CODES: PP=Pe	ristaltic Pump, GP= St	ubmersib	le Grundfos F	ump, IBP= In-	place Bladder	Pump		
	ING MATERIAL CODES: PP=	Polypropylene, PE=	Polyethyl	lene, NP= No	n-inert Plastic	, TL= Teflon L	ined, TT= Te	flon	
Reviewed By:					Date:				

Revision Date 09/25/09

1025

1028

031

034

103

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

W	Name and Course	Location:	Contac	ot:
Client Name:	Hazen and Sawyer	Location.	Phon	e:
ate Sampled	082112	SAL Project #	9014 Project Nar	ne S&GW Test Facility SE #2
		Comple ID	GPS L	AT
Vell Number	TA2-PZ-10-L6 DUP	Sample ID	GPS LOP	NG .

	PURGING DATA											
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	10.54	PURGE PUMP CODE	P GP	
TOTAL WELL DEPTH (Feet)	14.80	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)		
		bmerged Screen				EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)	
WELL V	OLUME = (TO	TAL DEPTH - ST	ATIC DEPTH)	x WELL CAPI	CITY =						L	
ONE WELL VOLUME	0.1		1/4 WELL VOLUME			3 WELL VOLUMES	0.50		5 WELL VOLUMES			
		EQUIPMENT V	DLUME = PUN	P VOLUME +	(TUBING CA	PACITY X TUE	SING LEGNTH	i) + FLOW CEL	L VOLUME			
PUMP VOLUME			TUBING LEGNTH		:	FLOW CELL VOLUME			EQUIPMEN T VOLUME			
INITIAL TUBII IN WELL			FINAL TUBII IN WELL			PURGE TIME START	1022	PURGE TIME END	1037	TOTAL PURGED	1.50	
INST. ID	\times	> <	\times	\times	SAL-SAM-63- <u>Ø/</u>	SAL-SAM - 65- <u>6</u> /	SAL-SAM-63	SAL-SAM-55- <u>02</u>	SAL-SAM-	\times	\times	
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)	
1025	0.30	0.30	0.10	10.70	4.3	27.5	470.8	1.08	148	CLOUDY	NONE	
1028	6.30	0.60	1		4.3	27.5	468.4	0.84	108		1	
1031	6.30	0.90			4.3	27.5	465.4	0.80	95.2			
1034	0.30	1.20			4.3	27.5	463.0	0.77	80.6			
1077	0.30	1.50	,		4.5	27.5	4611	0.72	65.7			
	Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88											
TUBIN	NG INSIDE DIA	A. CAPACITY (Ga	l./Ft.): 1/8" =	0.0006; 3/16"	= 0.0014; 1	4" = 0.0026;	5/16" = 0.004	4; 3/8" = 0.00	6; 1/2" = 0.0	010; 5/8" =	0.016	

SAMPLING DATA

SAMPLED BY (PRI			5AL			SAMPI SIGNA	` '		() o			
TUBING MATI (CIRCLE		PP PE NF	·'nπ	SAMPLE LEGNTH IN V				SAMPLE PL RATE (n				,
SAMPLING INITIATED	1043	SAMPLING ENDED	1044	FIELD CLEANED	YN	CLEANING STEPS						
FIELD FILTERED?	YÔ	FILTER SIZE (μm)		DUPLICATE	Y(N)	VOC COLL REVERS	ECTED BY E FLOW?	Y N (N/A)	SEMI-VOLS THROUG	COLLECTED SH TRAP?	Y N	Ø/A:
PRESER CHECKED		Y N N/A		ERVATIVES DED								
WEAT CONDI		Clear	, 82°									
СОММ	ENTS	,										
		PUMP CO	DES: PP=Per	istaltic Pump, (3P= Submers	ible Grundfos I	Pump, IBP= In	-place Bladder	Pump			
		ING MATERIAL C	ODES: PP=	Polypropylene,	PE= Polyeth	ylene, NP= No	on-inert Plasti	c, TL= Teflon L	ined, TT= Te	flon		
Re	Reviewed By:						Date:					

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	+	lazen and Sawye	Г	Location:				Contact: Phone:		-	
Date Sampled	0	82117		SAL Project #	1900	1014		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA2-PZ-09-M4		Sample ID	ĵ	1		GPS LAT GPS LONG			
				P	URGING	DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	6.34	PURGE PUMP CODE	€P GP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		ELEV	O WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	hnique: q Sul	bmerged Screen	(1,1/4,1/4 Well) q Submer	rged Screen (1	EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	OLUME = (10	TAL DEPTH - ST	1/4 WELL VOLUME	X VVELL CAPI	CITY =	3 WELL VOLUMES			5 WELL VOLUMES		l
		EQUIPMENT VO	DLUME = PUN	IP VOLUME +	(TUBING CA	ACITY X TUI	BING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	0837	PURGE TIME END	0852	TOTAL PURGED	1.50
INST. ID	\times	\times	\times	\geq	SAL-SAM-63 <u>©/</u>	SAL-SAM - 6 % - 9 /	SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (∆ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0840	0.30	0.30	0.10	6.80	5.4	16.5	5124	1.60	MAX	BROWN	, none
0843	0.30	0.60	<u> </u>		5.4	20.5	510.2	1.42	<u></u>		
084Q	0.30	0.90			5.3	26.5	5090	1.20			
0849	0-30	1.20			5.3	24.5	508.2	0.48			
0852	0.30	1.50	<i>J</i>	/	5.4	26.5	508,7	0.72	l	/	
TUBIN		Capacity (gallons/f				6, 3"=0.37 4" = 0.0026;	, 4"=0.65, 5/16" = 0.004			"5.88 010; 5/8" =	0.016
					AMPLIN	·		.,	<u> </u>	0.10, 0.0	5.616
SAMPLED BY (PRI	/ COMPANY NT)		SAL			SAMP	PLER(S) TURES:		Sil		
TUBING MAT (CIRCL		PP PE N	υΌπ		TUBING WELL (FEET)			SAMPLE PU RATE (r			
SAMPLING INITIATED	0853	SAMPLING ENDED	0854	FIELD CLEANED	YW	CLEANING STEPS		•			*
FIELD FILTERED?	Y (V)	FILTER SIZE (μm)		DUPLICATE	Y 💭		LECTED BY SE FLOW?	Y N N/A		COLLECTED SH TRAP?	Y N N/A
PRESER CHECKED		Y N N/A		ERVATIVES DED							
WEAT CONDI		cle	ar, 7	180							
СОММ	IENTS										
	TUD	PUMP CO	DES: PP=Per	istaltic Pump	GP= Submers	ble Grundfos	Pump, IBP= In	-place Bladder	Pump		
Re	viewed Bv:	ING MATERIAL (PODES: PP=	Polypropylene	, PE= Polyeth	yiene, NP= N	Ion-inert Plasti		ined, TT= Ter	flon	

Revision Date 09/25/09

Reviewed By:

Date:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

							NG LOC			5 == 10	
Client Name:	ŀ	lazen and Sawye	r	Location:				Contact: Phone:			
Date Sampled	C	82112		SAL Project #	1900	1014		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA2-PZ-16-M4		Sample ID	•	12		GPS LAT			
				Р	URGINO	DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	6.42	PURGE PUMP CODE	€E) GP
TOTAL WELL DEPTH (Feet)	17.28	REFERENCE ELEVATION (NGVD)		GROUND ELEV	D WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		bmerged Screen (TAL DEPTH - ST				EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scre	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	Ø-4	-> <i>+</i> -	1/4 WELL VOLUME	:		3 WELL VOLUMES	1.3		5 WELL VOLUMES		<u> </u>
		EQUIPMENT VO	DLUME = PUN	IP VOLUME +	(TUBING CA	PACITY X TUI	BING LEGNTH	l) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL			FINAL TUBII IN WELI			PURGE TIME START	0855	PURGE TIME END	0910	TOTAL PURGED	3.00
INST. ID	\times	\times	\times	\times	SAL-SAM-63	SAL-SAM -	SAL-SAM-63	SAL-SAM-55- <u>0</u> 2	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0828	0.40	0.60	0.70	4.58	5.2	26.7	220.4	0.32	94.2	CLOW	NONE
0901	0.60	1.20			5.2	26.7	224.8	0.72	149.4		
0904	6.60	1.80			5.3	26.2	225.1	0.51	292		
0907	0.60	2.40			5.3	26.2	227.0	0.44	458		
0910	0.60	3.00			5.4	26.2	227.5	0.40	6072	\$	}
TUBIN		apacity (gallons/fo	•				4"=0.65, 5/16" = 0.004			"5.88 010; 5/8" = 1	0.016
				S	AMPLIN	G DATA	1			•	
SAMPLED BY (PRI			SAL				LER(S) TURES:		Z-	A.	
TUBING MAT		PP PE NF	т		TUBING WELL (FEET)			SAMPLE PU RATE (r			
SAMPLING INITIATED	0911	SAMPLING ENDED	09/2	FIELD CLEANED	YN	CLEANING STEPS					-77.
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)	LICTRO	DUPLICATE	Y (N)		ECTED BY E FLOW?	Y N(N/A)		COLLECTED SH TRAP?	Y N (WA
PRESER CHECKED	-	⊘ N N/A	ADI	ERVATIVES DED					******		
WEAT CONDI		Clear	, 78	フ゛							

Revision Date 09/25/09

Reviewed By:

COMMENTS

Date:

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump
TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

	1		Contact	
Hazen and Sawyer	Location:		Phone:	
082112	SAL Project #	-09014 P1	roject Name	S&GW Test Facility SE #2
TAO D7 00 N7	Sample ID	12	GPS LAT	
TA2-PZ-U9-N7	Sample ID	13	GPS LONG	
	Hazen and Sawyer 082/12 TA2-PZ-09-N7	082112 SAL Project 19	082112 SAL Project 1209014 P	SAL Project Project Name TA2-P7-09-N7 Sample ID 13 GPS LAT

PURGING DATA

	PURGING DATA												
WELL DIAMETER (inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	6.18	PURGE PUMP CODE	PP GP		
TOTAL WELL DEPTH (Feet)	9-85	REFERENCE ELEVATION (NGVD)		GROUND ELEV/ (REFEREN	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)			
		bmerged Screen				EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)		
WELL V	OLUME = (TO	TAL DEPTH - ST	ATIC DEPTH)	x WELL CAPI	CITY =		•						
ONE WELL VOLUME	0.1	146	1/4 WELL VOLUME			3 WELL VOLUMES	0.4		5 WELL VOLUMES				
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME													
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME	i		EQUIPMEN T VOLUME				
INITIAL TUBI IN WELL			FINAL TUBII IN WELI	NG LEGNTH _ (FEET)		PURGE TIME START	1304	PURGE TIME END	1319	TOTAL PURGED	1.50		
INST. ID	\times	$>\!\!<$	\times	\times	SAL-SAM-63	SAL-SAM - 65- <u>0/</u>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	\times		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)		
1307	0.30	0.30	0.10	6.40	5.4	27.6	245.8	1.07	MAX	BROWN	NONE		
1310	0.30	0.60			5.4	27.7	747.0	1.02	ſ	1	1		
1313	0.30	0.90			5.4	27.7	249.4	0.78					
1316	0.30	1.20			514	27.7	250.7	0.52					
1319	0.30	1.50		1	5.4		7576	0.34					
		apacity (gallons/f			•		4"=0.65,	5"=1.02, 6	"=1.47, 12	'5.88			
TUBI	NG INSIDE DIA	A. CAPACITY (Ga	l./Ft.): 1/8" =	0.0006; 3/16"	= 0.0014; 1/	/4" = 0.0026 ;	5/16" = 0.004	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" = 0	0.016		
	TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016												

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)		5/46	_		SAMPL SIGNAT			-	ry	
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (īĎπ	SAMPLE LEGNTH IN V				SAMPLE PU RATE (n			
SAMPLING 1320		321	FIELD CLEANED	Y (B)	CLEANING STEPS					
FIELD Y W	FILTER SIZE (μm)		DUPLICATE	Y (N)	VOC COLL REVERSE	-	Y N NA		COLLECTED SH TRAP?	Y N (N/
PRESERVATION CHECKED IN FIELD?	ŴN N/A LI	IST PRESE ADD	ERVATIVES DED					•		
WEATHER CONDITIONS	Clear	87°	•							
COMMENTS										
	PUMP CODES	: PP=Peri	staltic Pump, G	P= Submersi	ble Grundfos F	ump, IBP= In	-place Bladder I	Pump		
TUBI	NG MATERIAL COD	ES: PP= F	olypropylene,	PE= Polyethy	/lene, NP= No	n-inert Plastic	, TL= Teflon Li	ned, TT= Tef	lon	
Reviewed By:						Date:				

WELL

000

1.20

1,80

0.20

Co.42

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

				Contact:	
Client Name:	Hazen and Sawyer	Location:		Phone:	
Date Sampled	082112	SAL Project #	4109061	Project Name	S&GW Test Facility SE #2
10/-11 01	TAO D7 46 N7	Comple ID	111	GPS LAT	
Well Number	TA2-PZ-16-N7	Sample ID	19	GPS LONG	

Static Depth **PURGE** WELL Screen (PP) GP **PUMP** DIAMETER CAPACITY Interval UNK To UNK to Water 6-31 IBP 0.04 100 (Inches) (gal/ft) (Feet) (Feet) CODE REFERENCE **GROUND WATER TUBING TUBING** TOTAL WELL **ELEVATION ELEVATION** DIAMETER CAPACITY DEPTH (Feet) 7.78 (NGVD) (REFERENCE-STATIC) (Inches) (gal/ft) Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes) WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY = ONE WELL 3 WELL 5 WELL 1/4 WELL 0.438 3 VOLUME VOLUMES VOLUMES VOLUME EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME **TUBING** FLOW CELL **EQUIPMEN** PUMP VOLUME **LEGNTH** VOLUME T VOLUME PURGE INITIAL TUBING LEGNTH FINAL TUBING LEGNTH PURGE TIME **TOTAL** TIME IN WELL (FEET) IN WELL (FEET) 1323 **END** 1332 **PURGED** 1,S0 START SAL-SAM-63 SAL-SAM-63 INST SAL-SAM -SAL-SAM-55-SAL-SAM-ID 01 630/ 01 02 0/ TOTAL VOLUME Depth to pΗ TEMP SP COND TURBIDITY DO VOLUME **PURGE** COLOR ODOR TIME **PURGED** Water (SU) (oC) (uS/cm) (NTUs) (mg/L) **PURGED** RATE (gpm) (Describe) (Describe) (Δ <0.2) (Gallons) (Feet) (∆ <0.2) (**\(<5\%**) (% SAT <20) (<20 NTU) (Gallons)

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 5"=1.02, 2"=0.16, 3"=0.37. 4"=0.65. 6"=1.47, 12"5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006;1/2" = 0.010; 5/8" = 0.016

5.3

76.7

26.7

76 J

712.7

210.9

210.6

CLEAR

NONE

0-84

0.65

153

SAMPLING DATA

SAMPLED BY (PRI			SAL				LER(S) TURES:		\mathcal{M}	·W	
TUBING MATI (CIRCLE		PP PE NF	· (1)π		TUBING WELL (FEET)			SAMPLE PU RATE (r			
SAMPLING INITIATED	1333	SAMPLING ENDED	1374	FIELD CLEANED	YW	CLEANING STEPS				******	
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)		DUPLICATE	Ϋ́N	,	ECTED BY E FLOW?	Y N N/A		COLLECTED SH TRAP?	Y N NA
PRESER CHECKED		YN N/A		ERVATIVES DED							
WEAT CONDI		Clear	, 88	>					***************************************		
СОММ	IENTS										
								-place Bladder			
		ING MATERIAL C	CODES: PP=	Polypropylene,	PE= Polyeth	ylene, NP= N			ined, TT= Te	flon	
Re	eviewed By:						Date:				

Revision Date 09/25/09

1326

329

1332

0.60

9.60

0.60

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

		ON ON O			
				Contact:	
Client Name:	Hazen and Sawyer	Location:		Phone:	
Date Sampled	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
		0		GPS LAT	
Well Number	TA2-PZ-09-17	Sample ID	15	GPS LONG	
		- Di	IDOING DATA		

PURGING DATA

PURGING DATA													
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	5.45	PURGE PUMP CODE	GP GP		
TOTAL WELL DEPTH (Feet)	_	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)			
Purge Tecl	hnique: q Sul	omerged Screen ((1,1/4,1/4 Well)		ged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)		
WELL V	OLUME = (TO	TAL DEPTH - ST.		x WELL CAPI	CITY =		<u> </u>						
ONE WELL VOLUME O. / G Y VOLUME VOLUME S O. 5 O. 4 VOLUMES EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME													
		EQUIPMENT V	DLUME = PUM	IP VOLUME +	(TUBING CA	PACITY X TUI	SING LEGNTH) + FLOW CEL	L VOLUME				
PUMP VOLUME TUBING LEGNTH FLOW CELL VOLUME EQUIPMEN T VOLUME													
INITIAL TUBII IN WELL	-		FINAL TUBII IN WELL	-		PURGE TIME START	1148	PURGE TIME END	1203	TOTAL PURGED	1.50		
INST. ID	\times	\times	\times	\times	SAL-SAM-63-	SAL-SAM - 65 ©/	SAL-SAM-63 <u>O/</u>	SAL-SAM-55-	SAL-SAM-	\times	\times		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)		
1151	6.30	0.30	0.10	5.50	5.3	27.7	270.6	0.98	MAX	BROWN	NONE		
1154	0.30	0.60			5.2	27.7	271.2	0.72	MAX				
1157	0.30	0.90			5.2	27.7	773.0	0.43	MAX				
1200	0.30	1.70			5.2	27.7	273.6	0.35	708				
1703					5.2	77.7	519ss	0.30	642		1		
	Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88												
TUBIN	NG INSIDE DI	A. CAPACITY (Ga	al./Ft.): 1/8" =	0.0006; 3/16'	' = 0.0014; 1	/4" = 0.0026;	5/16" = 0.00	4; 3/8" = 0.00	06; 1/2" = 0.	010; 5/8" =	0.016		

SAMPLING DATA

					11011						
SAMPLED BY (PRI			SAL	•		SAMPL SIGNAT	. ,	~			
TUBING MAT		PP PE NE		SAMPLE LEGNTH IN V	TUBING VELL (FEET)			1	UMP FLOW mL/min)		
SAMPLING INITIATED	1204	SAMPLING ENDED	1205	FIELD CLEANED	Y (Ŋ)	CLEANING STEPS					
FIELD FILTERED?	YN	FILTER SIZE (μm)		DUPLICATE	Ý (a)	VOC COLL REVERSI		Y N WA		COLLECTED SH TRAP?	Y N (NA)
PRESER CHECKED		⊘ N N/A		ERVATIVES DED			·				
WEAT CONDI		Clear	,85°								
СОММ	IENTS										
				ristaltic Pump, (
		ING MATERIAL	CODES: PP=	Polypropylene,	PE= Polyeth	ylene, NP= No	on-inert Plasti	c, TL= Teflon	Lined, TT= Te	flon	
Re	eviewed By:						Date:				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 B13-855-1844 FAX B13-855-2218

GROUNDWATER SAMPLING LOG

		1		Contact:	
lient Name:	Hazen and Sawyer	Location:		Phone:	
ate Sampled	082117	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
	<u> </u>		17	GPS LAT	
lell Number	TA2-PZ-16-I7	Sample ID	10	GPS LONG	

PURGING DATA Static Depth **PURGE** WELL Screen WELL PP) GP to Water **PUMP** UNK Τo UNK CAPACITY Interval DIAMETER 2.30 **IBP** 10 0.04 CODE (Feet) (Feet) (Inches) (gal/ft) **TUBING** TUBING **GROUND WATER** REFERENCE TOTAL WELL CAPACITY **ELEVATION** DIAMETER **ELEVATION** 25 DEPTH (Feet) (REFERENCE-STATIC) (Inches) (gal/ft) (NGVD) q Partially Submerged Screen (1 Well, 3,3 minutes) Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY = 5 WELL 3 WELL 1/4 WELL ONE WELL 314 0.438 VOLUMES VOLUMES VOLUME VOLUME EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME EQUIPMEN FLOW CELL **TUBING** PUMP VOLUME T VOLUME **LEGNTH** VOLUME PURGE TOTAL PURGE TIME INITIAL TUBING LEGNTH FINAL TUBING LEGNTH TIME 1207 3.00 IN WELL (FEET) **END** 1222 **PURGED** IN WELL (FEET) START SAL-SAM 65- O/ SAL-SAM-63 SAL-SAM-63 SAL-SAM-55-SAL-SAM-INST. 01 0/ οて 0_ ID TOTAL TEMP SP COND TURBIDITY Depth to pΗ DO VOLUME COLOR ODOR VOLUME **PURGE** (SU) (uS/cm) (mg/L) (NTUs) Water (oC) TIME PURGED (Describe) (Describe) **PURGED** RATE (gpm) (% SAT <20) (<20 NTU) (A <5%) (Feet) $(\Delta < 0.2)$ $(\Delta < 0.2)$ (Gallons) (Gallons) 75.8 CLOUPY NONE le:48 ZG.9 217.8 0.80 1210 0,60 0.60 0.70 5.2 0.77 (eO. G 5.2 O. (20 20 1213 048 5.2 O. (20 2C. 213.0 48.4 12(G 0,60 2.40 214.8 1219 0.60 5.2 7Ce. 3,00 1222 4.2 4"=0.65 5"=1 02 12"5.88 Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37 6"=1 47

SAMPLING DATA

1/4" = 0.0026;

3/8" = 0.006;

5/16" = 0.004;

5/8" = 0.016

1/2" = 0.010;

					/1411 -11 14	<u> </u>						
SAMPLED BY (PRII		5	AL			SAMPI SIGNA	LER(S) FURES:		\nearrow	j. 6/		
TUBING MATE (CIRCLE		PP PE NP	TL)π	SAMPLE LEGNTH IN V				SAMPLE PUI RATE (m				
SAMPLING INITIATED	1223	SAMPLING ENDED	1224	FIELD CLEANED	ΥŴ	CLEANING STEPS						
FIELD FILTERED?	Y(N)	FILTER SIZE (μm)		DUPLICATE	YN		ECTED BY E FLOW?	Y N (N/A)		COLLECTED SH TRAP?	Y N	€ V/A
PRESERY CHECKED		⟨Ŷ)N N/A		ERVATIVES DED								
WEAT CONDI												
СОММ	ENTS											
								n-place Bladder I				
	TUB	ING MATERIAL C	ODES: PP=	Polypropylene,	PE= Polyeth	ylene, NP= N	on-inert Plasti	ic, TL= Teflon Li	ned, TT= Te	flon		
Re	viewed By:						Date	:[

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014;

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

1 Contoot:1
Contact:
Phone:
Project Name S&GW Test Facility SE #2
GPS LAT
GPS LONG
_

PURGING DATA

PURGING DATA													
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	Ce.08	PURGE PUMP CODE	(PP) GP IBP		
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	TION E-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)			
Purge Tec	hnique: q Sul	omerged Screen ((1,1/4,1/4 Well)	q Submer	ged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)		
WELL V	OLUME = (TO	TAL DEPTH - ST.		x WELL CAPI	CITY =	=			5 WELL				
ONE WELL VOLUME	0.1	5	1/4 WELL VOLÚME			3 WELL VOLUMES	0.4		VOLUMES	<u> </u>			
	EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME												
PUMP VOLUME TUBING LEGNTH FLOW CELL VOLUME EQUIPMEN T VOLUME													
INITIAL TUBING LEGNTH IN WELL (FEET) FINAL TUBING LEGNTH IN WELL (FEET) FINAL TUBING LEGNTH IN WELL (FEET) FINAL TUBING LEGNTH IN WELL (FEET) PURGE TIME START 124 PURGE TIME 124 PURGE 124 PURGE 1.50										1.50			
INST. ID	\times	\times	\times	\times	SAL-SAM-63-	SAL-SAM - 65- <u>~/</u>	SAL-SAM-63	SAL-SAM-55- ಲ <u>ಇ</u>	SAL-SAM- 0_/	\geq	\times		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)		
1229	0.30	0.30	0.10	(9.40	5.8	27.8	3724	0.74	97.1	CLOUP	Nove		
1232	0.30	0.60			5.8	27.8	380.4	0.75	108				
1235	0.30	0.90		1	5.9	77.7	392.7	0.69	207				
1238	0.30	1.20			5.9	27.7	410.4	0.02	242				
1241	0.30	1.50	1		5.9	27.7	419.1	0.58	275		1		
	Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88												
TUBI	NG INSIDE DI	A. CAPACITY (G	al./Ft.): 1/8" =	0.0006; 3/16"	= 0.0014; 1	/4" = 0.0026;	5/16" = 0.00	4; 3/8" = 0.00	06; 1/2" = 0.	010; 5/8" =	0.016		

SAMPLING DATA

				<u> </u>		<u> </u>						
SAMPLED BY (PRI			SAL			SAMPL SIGNAT			96	<u>'</u>		
TUBING MATI		PP PE NF	Φπ	SAMPLE LEGNTH IN V				SAMPLE PU RATE (n				
SAMPLING INITIATED	1242	SAMPLING ENDED	1243	FIELD CLEANED	YW	CLEANING STEPS				-		
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y	VOC COLL REVERSI		Y N (N/A)	SEMI-VOLS THROUG	COLLECTED SH TRAP?	YN	(N/A
PRESER CHECKED		⊘N N/A		ERVATIVES DED								
WEAT CONDI	—	clear	,85°	,								
COMM	IENTS						,					
								n-place Bladder				
	TUE	ING MATERIAL (CODES: PP=	Polypropylene,	, PE= Polyeth	ylene, NP= N	on-inert Plasti	c, TL= Teflon L	ined, TT= Te	flon	·	
Re	eviewed By:						Date:					

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

			GR	COMPA	MILK		10 100				
Client Name:	Н	azen and Sawyer		Location:				Contact: Phone:			
Date Sampled	08	2112		SAL Project	1909	014		Project Name	S&GW	V Test Facility	SE #2
Well Number	00	TA2-PZ-16-L8		# Sample ID	100	8		GPS LAT			
VVEII (VUITIDE)		174.12.10.20			URGING			GPS LONG			
_				P	UKGING	DATA					
WELL DIAMETER	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	6.12	PURGE PUMP CODE	PP) GI IBP
(Inches) TOTAL WELL DEPTH (Feet)	17.70	REFERENCE ELEVATION		GROUND ELEV				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
, ,		(NGVD) omerged Screen (4 4/4 1/4 \Moli		ged Screen (1	FO Volume 3	3 Minutes)	q Partially Sub	merged Scree		minutes)
Purge rec	OLUMF = (TO	TAL DEPTH - ST	ATIC DEPTH)	x WELL CAPI	CITY =	LQ Volume, o	, o willates)		gaa aala		
ONE WELL VOLUME	0.4	460	1/4 WELL VOLUME			3 WELL VOLUMES	1. 7		5 WELL VOLUMES		
		EQUIPMENT VO	DLUME = PUM	IP VOLUME +	(TUBING CAI	PACITY X TUE	SING LEGNTH	I) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH	:		FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL				NG LEGNTH _ (FEET)		PURGE TIME START	1245	PURGE TIME END	1300	TOTAL PURGED	3.0
INST. ID	\times	\times	\times	\times	SAL-SAM-63-	SAL-SAM - 65 <i>©1</i>	SAL-SAM-63	SAL-SAM-55- の2	SAL-SAM- 0_/	\geq	\geq
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describ
1248	0,60	0.60	0.20	Ce-35	5.6e	27.3	726-2	0.62	588	BROWN	NON
1251	0.60	1.20		1	5,6	27.3	228.7	0.48	587		
1254	0.60	1.80			5.6	27.3	229.9	0.50	589		
1257	0.60	2.40			5,6	27.3	230.8	0.35	591		
1300	0.60	3.00		(5.6		232.8		590	<u> </u>	1
		Capacity (gallons/l				•				2"5.88	
TUBI	NG INSIDE DIA	A. CAPACITY (Ga	al./Ft.): 1/8" =				5/16" = 0.00	4; 3/8" = 0.00	06; 1/2" = 0.	.010; 5/8" =	U.016
				S	AMPLIN	<u>G D</u> ATA	<u>\</u>				
	SAMPLED BY / COMPANY (PRINT)		SAL				PLER(S) TURES:	S	×i.	1	
	TERIAL CODE LE ONE)	PP PE NI	Р ПОТ		E TUBING WELL (FEET)				UMP FLOW mL/min)		
SAMPLING INITIATED	1301	SAMPLING ENDED	1302	FIELD CLEANED	YW	CLEANING STEPS		T _	Technolog	COLLECTE	
FIELD FILTERED?	Y	FILTER SIZE (μm)	LICT DESC	DUPLICATE			LECTED BY SE FLOW?	Y N N/A		S COLLECTED GH TRAP?	YNC
■ PRESE	RVATION		I LIST PRES	EKVATIVES	1						

Revision Date 09/25/09

Reviewed By:

PRESERVATION

CHECKED IN FIELD?

WEATHER CONDITIONS

COMMENTS

Ŷ) N N/A

Clear, 870

LIST PRESERVATIVES

Date:

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 B13-855-1844 FAX B13-855-2218

GROUNDWATER SAMPLING LOG

				Contact:	
Client Name:	Hazen and Sawyer	Location:		Phone:	
Date Sampled	082717	SAL Project #	209014	Project Name	S&GW Test Facility SE #2
		0	10	GPS LAT	
Well Number	TA2-PZ-09-TU19	Sample ID	19	GPS LONG	

PURGING DATA Static Depth **PURGE** WELL WELL Screen PP GP to Water **PUMP** UNK CAPACITY Interval UNK То DIAMETER 0.04 542 **IBP** 1.0 (gal/ft) (Feet) (Feet) CODE (Inches) GROUND WATER TUBING **TUBING** REFERENCE TOTAL WELL **ELEVATION** DIAMETER CAPACITY **ELEVATION** DEPTH (Feet) 9 8 (REFERENCE-STATIC) (Inches) (gal/ft) (NGVD) Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes) WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY = 5 WELL 3 WELL ONE WELL 1/4 WELL 0.5 3 0.1 VOLUMES VOLUMES **VOLUME** VOLUME EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME FLOW CELL EQUIPMEN TUBING PUMP VOLUME T VOLUME **LEGNTH** VOLUME **PURGE** FINAL TUBING LEGNTH **PURGE TIME** INITIAL TUBING LEGNTH TOTAL TIME 0711 0726 1.50 IN WELL (FEET) IN WELL (FEET) **END PURGED** START SAL-SAM-63 SAL-SAM -SAL-SAM-63 SAL-SAM-55-SAL-SAM-INST. *ا تا* -65 02 ID 01 01 TOTAL **TFMP** SP COND TURBIDITY VOLUME Depth to pН DO COLOR ODOR PURGE VOLUME (SU) (uS/cm) (NTUs) TIME **PURGED** Water (oC) (mg/L) **PURGED** RATE (gpm) (Describe) (Describe) (% SAT <20) (<20 NTU) (Gallons) (Feet) $(\Delta < 0.2)$ $(\Delta < 0.2)$ (∆ <5%) (Gallons) 0.10 6.10 3.2 BROW 76. MONE 0.30 0.30 4.2 0714 2.72 0.30 0. G O 180.2 0717 2 0.30 2.50 0120 26.8 Z 20 26.8 2.20 0723 0.30 26.8 ,0G 726 30 7 Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37 4"=0.65 5"=1.02 12"5.88 6"=1.47 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006;1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY (PRI			SAC				LER(S) TURES:	*-	>-{		·/
TUBING MAT (CIRCLI		PP PE NF	rπ	SAMPLE LEGNTH IN V				SAMPLE PU RATE (n			
SAMPLING INITIATED	0727	SAMPLING ENDED		FIELD CLEANED	v ♠	CLEANING STEPS					
FIELD FILTERED?	ILTERED? Y (µm)			DUPLICATE	Y (N)		ECTED BY E FLOW?	Y N (NA)		COLLECTED SH TRAP?	Y N N/A
PRESER CHECKED		N N/A		ERVATIVES DED							
WEAT CONDI		Clear	,74	¢.							
СОММ	IENTS							_			
								-place Bladder			
TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyeth							on-inert Plastic	c, TL= Tefion L	ined, TT= Te	flon	
I R∈	eviewed By:						Date:				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

	11	Lacations		Contact:	
Client Name:	Hazen and Sawyer	Location:		Phone:	
Date Sampled	082212	SAL Project #	209014	Project Name	S&GW Test Facility SE #2
T		Q12	26	GPS LAT	
Well Number	TA2-PZ-16-TU19	Sample ID	<i>A</i> O	GPS LONG	

PURGING DATA

I ONGING DATA												
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.0	4	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	5.34	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	_	REFERENCE ELEVATION (NGVD)			ELE (REFERE	ND WATER VATION NCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen					EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
	OLUME = (TO	TAL DEPTH - ST.			x WELL CA	PICITY =		1				
ONE WELL VOLUME 3 WELL VOLUMES 1.4 Z 5 W												
		EQUIPMENT VO	DLUME =	PUM	P VOLUME	+ (TUBING CA	PACITY X TU	BING LEGNTH	i) + FLOW CEL	L VOLUME		
PUMP VOLUME TUBING LEGNTH FLOW CELL VOLUME TVOLUME												
	NITIAL TUBING LEGNTH FINAL TUBING L IN WELL (FEET) IN WELL (FE					н	PURĞE TIME START	0730	PURGE TIME END	0745	TOTAL PURGED	3.00
INST. ID	\times	\times	>		\times	SAL-SAM-63	SAL-SAM - 65- <u>0/</u>	SAL-SAM-63 <u>01</u>	SAL-SAM-55- 02	SAL-SAM- 0_/	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURG RATE (g	_ ,	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0733	0.60	0.60	0.7	20	5,90	5.1	75.9	197-8	2.65	MAX	BROWN	NONE
0136	0.40	1.20				5.1	25.9	199.5	2.42	MAX		
0739	660	1.50				5.2	25.7	202.4	1.40	292		
0742	0.60	2.40				5.2	75.7	205.4	0.86	112	CLOUDY	
0745	0.60	300				5.2	25.7	204.0	0.52	34.3		
	Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88											
TUBIN	NG INSIDE DIA	A. CAPACITY (Ga	ıl./Ft.): 1/	/8" = 1	0.0006; 3/	16" = 0.0014; 1	/ 4" = 0.0026;	5/16" = 0.00	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" =	0.016

SAMPLING DATA

				35	VIAIL FIIA	GDATA	ı				
SAMPLED BY (PRII			SAL	-		SAMPL SIGNAT		-		14	
TUBING MATE (CIRCLE		PP PE NF	, Ф	SAMPLE LEGNTH IN V				SAMPLE PU RATE (n			
SAMPLING INITIATED	0746	9 ENDED 0147 CLEANE		FIELD CLEANED	W	CLEANING STEPS					
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)	,	DUPLICATE	Y (B)	VOC COLL REVERSI		Y N WA		COLLECTED GH TRAP?	Y N N/A
	PRESERVATION CHECKED IN FIELD?			ERVATIVES DED							
WEAT CONDI		Clear	,740								
COMMENTS											
								-place Bladder			
		ING MATERIAL C	ODES: PP=	Polypropylene,	PE= Polyeth	ylene, NP= No	on-inert Plastic	c, TL= Teflon L	ned, TT= Te	flon	
Re	viewed By:						Date:				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

				Contact:	
lient Name:	Hazen and Sawyer	Location:		Phone:	
ate Sampled	082212	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
			^ \	GPS LAT	
Vell Number	TA2-PZ-09-TU21	Sample ID	<i>3-1</i>	GPS LONG	

PURGING DATA

PURGING DATA											
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	5.31	PURGE PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)	17.02	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	TION E-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	hnique: q Sut	omerged Screen	1,1/4,1/4 Well)	q Submer	ged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
WELL V	OLUME = (TO	TAL DEPTH - ST.		x WELL CAPI	CITY =				- 14 - 1		
ONE WELL VOLUME	0.0		1/4 WELL VOLUME			3 WELL VOLUMES	0.5		5 WELL VOLUMES		
	EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME										
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
	INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBII IN WELL			PURGE TIME START	0753	PURGE TIME END	0808	TOTAL PURGED	1.50
INST. ID	\times	\times	\times	\times	SAL-SAM-63	SAL-SAM - 65- <i>01</i>	SAL-SAM-63 <u>©/</u>	SAL-SAM-55-	SAL-SAM- 0_/	\times	$>\!\!<$
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0756	0.30	0.30	0.10	5.54	4.4	76.2	175.2	7.16	MAX	BROWN	NONE
0759	0.30	0.60		1	4.4	26.7	168.2	0.77	MAX		
0802	0.30	0.90			4.3	26.8	169.0	6.62	MAX		
0805	0.30	1.20			4,4	26.8	169.5	6.49	432	/	
0808	0.30	1,50		7	4.4	76.8	169.9	0.42	184	CLOUDY	
	Well C	Capacity (gallons/	foot): 0.75"=0.	02, 1.25"=0	0.06, 2"=0.1	6, 3"=0.37	, 4"=0.65,	5"=1.02, 6	5"=1.47, 12	"5.88	
TUBII	NG INSIDE DIA	A. CAPACITY (G	al./Ft.): 1/8" =	0.0006; 3/16"	= 0.0014; 1	/4" = 0.0026;	5/16" = 0.00	4; 3/8" = 0.00)6; 1/2" = 0.	010; 5/8" =	0.016
					A MADE IN						

SAMPLING DATA

				•								
SAMPLED BY (PRI			SA(SAMPL SIGNAT			1	tiny		
TUBING MAT (CIRCL		PP PE NP TL TT SAMPLE TU LEGNTH IN WEI			- I		SAMPLE PUMP FLOW RATE (mL/min)					
SAMPLING INITIATED	0809	SAMPLING ENDED		FIELD CLEANED	√ ⊕ ′	CLEANING STEPS				***		
FIELD FILTERED?	Y (Q)	FILTER SIZE (µm)		DUPLICATE	Y(A)	VOC COLL REVERSI		Y N NA		COLLECTED SH TRAP?	Y N N/A	
PRESER CHECKED		♥ _{N N/A}		ERVATIVES DED								
WEAT CONDI		olea	٧, ١	75°								
COMM	IENTS											
	TUE			ristaltic Pump, C								
De	eviewed By:	ING MATERIAL (ODES: PP=	Polypropylene,	PE= Polyeth	iyiene, NP≕ No			inea, IT=Te	tion		
1/6	TVICTVEU DY.	1					Date:					

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

				Contact:	
Client Name:	Hazen and Sawyer	Location:		Phone:	
Date Sampled	082212	SAL Project	1209014	Project Name	S&GW Test Facility SE #2
		1	22	GPS LAT	
Well Number	TA2-PZ-16-TU21	Sample ID	20	GPS LONG	

				P	URGING	DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	5,80	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.30	REFERENCE		GROUND ELEVA (REFERENC	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	hnique: q Su	omerged Screen (1,1/4,1/4 Well)	q Submer	ged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL V		TAL DEPTH - ST	1/4 WELL VOLUME			3 WELL VOLUMES	1.38		5 WELL VOLUMES		
PUMP VOLUME			TUBING LEGNTH	IP VOLUME +	(TUBING CA	FLOW CELL VOLUME	SING LEGNTH) + FLOW CEL	EQUIPMEN T VOLUME		
	INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBII			PURGE TIME START	0813	PURGE TIME END	0822	TOTAL PURGED	1.80
INST.	\times	\times	\times	\times	SAL-SAM-63	SAL-SAM - 65- <u>0/</u>	SAL-SAM-63	SAL-SAM-55- 02-	SAL-SAM- 0_ <i>İ</i>	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0816	0.60	0.60	0.70	G.10	5,0	26.0	191.1	0.80	4.0.1	CLOSDY	NONE
0819	0.60	1.20	/	1	5.0	26.0	191.6	0.86	44.0		/
0822	0.60	1.80			5.0	25.9	192.5	0.44	44.7		
				:						:	
		Capacity (gallons/								"5.88	
I TUBI	NG INSIDE DI	A. CAPACITY (Ga	al./Ft.): 1/8" =	0.0006; 3/16	' = 0.0014; 1	/4" = 0.0026;	5/16" = 0.00	4; 3/8" = 0.00	06; 1/2" = 0.	010; 5/8" =	0.016

SAMPLING DATA SAMPLER(S) SAMPLED BY / COMPANY SIGNATURES: (PRINT) SAMPLE PUMP FLOW TUBING MATERIAL CODE SAMPLE TUBING PP PE NP TL TT LEGNTH IN WELL (FEET) RATE (mL/min) (CIRCLE ONE) SAMPLING SAMPLING FIELD CLEANING Y(N)0823 CLEANED **STEPS ENDED** INITIATED VOC COLLECTED BY SEMI-VOLS COLLECTED FILTER SIZE FIELD Y N (NA Y N WA Y(N)Y (N) DUPLICATE **REVERSE FLOW?** THROUGH TRAP? FILTERED? (μ**m**) LIST PRESERVATIVES PRESERVATION Ϣn n/a CHECKED IN FIELD? ADDED Clear, 75 WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon Reviewed By: Date:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Laboratory Report

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA3-PZ-11-EF2 Groundwater 1209015-01 08/23/12 08:48 Josephine Edeback-1 08/24/12 13:30	Hirst					
Client Provided Field Data								
pH Temperature Conductivity Dissolved Oxygen		4.9 27.4 °C 26.9 umhos 5.03 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.018 I	EPA 350.1	0.040	0.009		08/29/12 12:41	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDB
Chloride	mg/L	12	EPA 300.0	0.20	0.050		08/24/12 11:13	JAG
Fluoride	mg/L	0.023 I	EPA 300.0	0.040	0.010		08/24/12 11:13	JAG
Nitrate (as N)	mg/L	9.3	EPA 300.0	0.04	0.01		08/24/12 11:13	JAG
Nitrate+Nitrite (N)	mg/L	9.9	EPA 353.2	0.40	0.10		08/27/12 15:30	MMF
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		08/24/12 11:13	JAG
Phosphorous - Total as P	mg/L	0.024 I	SM 4500P-E	0.040	0.010	08/24/12 11:50	08/27/12 12:10	MMF
Sulfate	mg/L	48	EPA 300.0	0.60	0.20		08/24/12 11:13	JAG
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 13:36	MMF
Total Organic Carbon	mg/L	0.78 I	SM 5310B	1.0	0.50		08/29/12 00:45	MEJ
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	0.55 I	SM 5310B	1.0	0.50		08/28/12 16:37	MEJ
<u>Metals</u>								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	08/24/12 08:48	08/29/12 15:27	VWC
Calcium	mg/L	24	EPA 200.7	0.50	0.042	08/24/12 08:48	08/29/12 15:27	VWC
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	08/24/12 08:48	08/29/12 15:27	VWC
Magnesium	mg/L	6.5	EPA 200.7	0.50	0.020	08/24/12 08:48	08/29/12 15:27	VWC
Manganese	mg/L	0.073	EPA 200.7	0.010	0.0010	08/24/12 08:48	08/30/12 12:53	VWC
Potassium	mg/L	9.5	EPA 200.7	0.050	0.010	08/24/12 08:48	08/29/12 15:27	VWC
Sodium	mg/L	8.7	EPA 200.7	0.50	0.13	08/24/12 08:48	08/29/12 15:27	VWC

Sample Description TA3-PZ-11-I2

Matrix Groundwater

SAL Sample Number 1209015-02

Date/Time Collected 08/23/12 09:10

Collected by Josephine Edeback-Hirst

Date/Time Received **08/24/12 13:30**

Client Provided Field Data

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Laboratory Report

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA3-PZ-11-I2						
Matrix		Groundwater						
SAL Sample Number		1209015-02						
Date/Time Collected		08/23/12 09:10						
Collected by		Josephine Edeback-	Hirst					
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
рН		4.3						
Temperature		27.4 °C						
Conductivity		373 umhos						
Dissolved Oxygen		3.08 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:18	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDB
Chloride	mg/L	30	EPA 300.0	0.20	0.050		08/24/12 11:13	JAG
Fluoride	mg/L	0.11	EPA 300.0	0.040	0.010		08/24/12 11:13	JAG
Nitrate (as N)	mg/L	14	EPA 300.0	0.04	0.01		08/24/12 11:13	JAG
Nitrate+Nitrite (N)	mg/L	14	EPA 353.2	0.40	0.10		08/27/12 15:32	MMF
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		08/24/12 11:13	JAG
Phosphorous - Total as P	mg/L	0.021 I	SM 4500P-E	0.040	0.010	08/24/12 11:50	08/27/12 12:11	MMF
Sulfate	mg/L	55	EPA 300.0	0.60	0.20		08/24/12 11:13	JAG
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 13:38	MMF
Total Organic Carbon	mg/L	1.1	SM 5310B	1.0	0.50		08/29/12 00:45	MEJ
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	0.87	SM 5310B	1.0	0.50		08/28/12 16:37	MEJ
<u>Metals</u>								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	08/24/12 08:48	08/29/12 15:31	VWC
Calcium	mg/L	25	EPA 200.7	0.50	0.042	08/24/12 08:48	08/29/12 15:31	VWC
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	08/24/12 08:48	08/29/12 15:31	VWC
Magnesium	mg/L	9.4	EPA 200.7	0.50	0.020	08/24/12 08:48	08/29/12 15:31	VWC
Manganese	mg/L	0.081	EPA 200.7	0.010	0.0010	08/24/12 08:48	08/29/12 15:31	VWC
Potassium	mg/L	7.5	EPA 200.7	0.050	0.010	08/24/12 08:48	08/29/12 15:31	VWC
Sodium	mg/L	19	EPA 200.7	0.50	0.13	08/24/12 08:48	08/29/12 15:31	VWC

Sample Description TA3-PZ-10-J5
Matrix Groundwater
SAL Sample Number 1209015-03
Date/Time Collected 08/23/12 10:20
Collected by Josephine Edeback-Hirst

Date/Time Received **08/24/12 13:30**

Client Provided Field Data

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Laboratory Report

Project Name S&GW Test Facility SE#2									
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву	
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA3-PZ-10-J5 Groundwater 1209015-03 08/23/12 10:20 Josephine Edeback 08/24/12 13:30	-Hirst						
Client Provided Field Data pH Temperature Conductivity Dissolved Oxygen		4.3 26.9 °C 308 umhos 2.05 mg/L							
Inorganics Ammonia as N Ammonium as NH4 Chemical Oxygen Demand Chloride Nitrate+Nitrite (N) Phosphorous - Total as P Total Alkalinity Total Kjeldahl Nitrogen	mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.009 U 0.005 U 10 U 15 7.0 0.028 I 2.0 U 1.2	EPA 350.1 EPA 350.1 EPA 410.4 EPA 300.0 EPA 353.2 SM 4500P-E SM 2320B EPA 351.2	0.040 0.01 25 0.20 0.40 0.040 8.0 0.20	0.009 0.005 10 0.050 0.10 0.010 2.0 0.05	08/31/12 15:54 08/23/12 11:10 08/24/12 11:50 08/25/12 10:00 08/27/12 08:33	08/30/12 10:20 08/31/12 15:55 08/24/12 13:15 08/30/12 10:36 08/27/12 15:35 08/27/12 12:12 08/27/12 09:11 08/28/12 13:39	MMF MMF CDB JAG MMF MMF AES MMF	

Sample Description TA3-PZ-10-J5 DUP
Matrix Groundwater
SAL Sample Number 1209015-04
Date/Time Collected 08/23/12 10:25

Collected by Josephine Edeback-Hirst

Date/Time Received 08/24/12 13:30

Client Provided Field Data

pH Temperature Conductivity Dissolved Oxygen		4.3 26.9 °C 308 umhos 2.05 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:22	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDB
Chloride	mg/L	17	EPA 300.0	0.20	0.050		08/30/12 10:36	JAG
Nitrate+Nitrite (N)	mg/L	7.7	EPA 353.2	0.40	0.10		08/27/12 15:37	MMF
Phosphorous - Total as P	mg/L	0.021 I	SM 4500P-E	0.040	0.010	08/24/12 11:50	08/27/12 12:16	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/25/12 10:00	08/27/12 09:11	AES
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 15:23	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Laboratory Report

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA3-PZ-10-K5						
Matrix		Groundwater						
SAL Sample Number		1209015-05						
Date/Time Collected		08/23/12 10:56						
Collected by Date/Time Received		Josephine Edeback-	Hirst					
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
рН		4.4						
Temperature		27.0 °C						
Conductivity Dissolved Oxygen		324 umhos 1.88 mg/L						
Inorganics		1.00 mg/L						
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:24	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.040	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chemical Oxygen Demand	mg/L	11 I	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDB
Chloride	mg/L	0.050 U	EPA 300.0	0.20	0.050	00/20/12 11:10	08/30/12 10:36	JAG
Nitrate+Nitrite (N)	mg/L	8.5	EPA 353.2	0.40	0.10		08/27/12 15:39	MMF
Phosphorous - Total as P	mg/L	0.016 I	SM 4500P-E	0.040	0.010	08/24/12 11:50	08/27/12 12:17	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/25/12 10:00	08/27/12 09:11	AES
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 13:46	MMF
Sample Description		TA3-PZ-11-L2						
Matrix		Groundwater						
SAL Sample Number		1209015-06						
Date/Time Collected		08/23/12 15:46						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	4.5	DEP FT1100	0.1	0.1		08/23/12 15:46	SAS
Water Temperature	°C	27.7	DEP FT1400	0.1	0.1		08/23/12 15:46	SAS
Specific conductance	umhos/cm	360	DEP FT1200	0.1	0.1		08/23/12 15:46	SAS
Dissolved Oxygen	mg/L	1.1	DEP FT1500	0.1	0.1		08/23/12 15:46	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:26	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Chloride	mg/L	30	EPA 300.0	0.20	0.050		08/24/12 20:00	JAG
Fluoride	mg/L	0.11	EPA 300.0	0.040	0.010		08/24/12 20:00	JAG
Nitrate (as N)	mg/L	13	EPA 300.0	0.04	0.01		08/24/12 20:00	JAG
Nitrate+Nitrite (N)	mg/L	14	EPA 353.2 EPA 300.0	0.40	0.10		08/27/12 15:41	MMF
Orthophosphate as P Phosphorous - Total as P	mg/L	0.010 U 0.063	SM 4500P-E	0.040 0.040	0.010	08/24/12 11:50	08/24/12 20:00 08/27/12 12:18	JAG MMF
ו ווטפטווטוטעט - וטנמו מט ד	mg/L	0.003	OW 40001 -E	0.040	0.010	00/24/12 11:00	00/21/12 12.10	IVIIVIF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description	Т	A3-PZ-11-L2						
Matrix		Groundwater						
SAL Sample Number	1	209015-06						
Date/Time Collected	0	8/23/12 15:46						
Collected by	S	ean Schmidt						
Date/Time Received	0	8/24/12 13:30						
Client Provided Field Data								
Sulfate	mg/L	56	EPA 300.0	0.60	0.20		08/24/12 20:00	JAG
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/25/12 10:00	08/27/12 09:11	AES
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:13	MMF
Total Organic Carbon	mg/L	1.5	SM 5310B	1.0	0.50		08/29/12 00:45	MEJ
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	1.4	SM 5310B	1.0	0.50		08/28/12 16:37	MEJ
Metals	_							
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	08/29/12 08:00	08/29/12 17:06	VWC
Calcium	mg/L	26	EPA 200.7	0.50	0.042	08/29/12 08:00	08/29/12 17:06	VWC
Iron	mg/L	0.022 I	EPA 200.7	0.10	0.020	08/29/12 08:00	08/29/12 17:06	VWC
Magnesium	mg/L	8.6	EPA 200.7	0.50	0.020	08/29/12 08:00	08/29/12 17:06	VWC
Manganese	mg/L	0.066	EPA 200.7	0.010	0.0010	08/29/12 08:00	08/29/12 17:06	VWC
Potassium	mg/L	8.4	EPA 200.7	0.050	0.010	08/29/12 08:00	08/29/12 17:06	VWC
Sodium	mg/L	23	EPA 200.7	0.50	0.13	08/29/12 08:00	08/29/12 17:06	VWC
Sample Description	Т	A3-PZ-11-L3						
Matrix	G	Froundwater						
SAL Sample Number	1	209015-07						
Date/Time Collected	0	8/23/12 16:05						
Collected by	S	ean Schmidt						
Date/Time Received	O	8/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		08/23/12 16:05	SAS
Water Temperature	°C	27.4	DEP FT1400	0.1	0.1		08/23/12 16:05	SAS
Specific conductance	umhos/cm	353	DEP FT1200	0.1	0.1		08/23/12 16:05	SAS
Dissolved Oxygen	mg/L	1.3	DEP FT1500	0.1	0.1		08/23/12 16:05	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:28	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Chloride	mg/L	24	EPA 300.0	0.20	0.050		08/30/12 10:36	JAG
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	0.40	0.10		08/27/12 15:43	MMF
Phosphorous - Total as P	mg/L	0.15	SM 4500P-E	0.040	0.010	08/24/12 11:50	08/27/12 12:19	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:14	MMF

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA3-PZ-11-L4 Groundwater 1209015-08 08/23/12 09:36 Josephine Edeback 08/24/12 13:30	c-Hirst					
Client Provided Field Data pH Temperature Conductivity Dissolved Oxygen		4.4 27.2 °C 356 umhos 2.25 mg/L						
Inorganics Ammonia as N Ammonium as NH4 Chemical Oxygen Demand Chloride Nitrate+Nitrite (N) Phosphorous - Total as P Total Alkalinity Total Kjeldahl Nitrogen	mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.009 U 0.005 U 17 I 23 11 0.055 2.0 U	EPA 350.1 EPA 350.1 EPA 410.4 EPA 300.0 EPA 353.2 SM 4500P-E SM 2320B EPA 351.2	0.040 0.01 25 0.20 0.40 0.040 8.0 0.20	0.009 0.005 10 0.050 0.10 0.010 2.0 0.05	08/31/12 15:54 08/23/12 11:10 08/24/12 11:50 08/25/12 10:00 08/27/12 08:34	08/30/12 10:30 08/31/12 15:55 08/24/12 13:15 08/30/12 10:36 08/27/12 15:50 08/27/12 12:20 08/27/12 09:11 08/28/12 14:16	MMF MMF CDB JAG MMF MMF AES

Sample DescriptionTA3-PZ-10-L5MatrixGroundwaterSAL Sample Number1209015-09Date/Time Collected08/23/12 09:57

Collected by Josephine Edeback-Hirst

Date/Time Received **08/24/12 13:30**

Client Provided Field Data

pН		4.5						
Temperature		27.1 °C						
Conductivity		346 umhos						
Dissolved Oxygen		1.45 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:32	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chemical Oxygen Demand	mg/L	20 I	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDB
Chloride	mg/L	22	EPA 300.0	0.20	0.050		08/30/12 10:36	JAG
Nitrate+Nitrite (N)	mg/L	11	EPA 353.2	0.40	0.10		08/27/12 15:53	MMF
Phosphorous - Total as P	mg/L	0.040	SM 4500P-E	0.040	0.010	08/24/12 11:50	08/27/12 12:21	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:18	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA3-PZ-09-N3 Groundwater 1209015-10 08/23/12 15:13 Sean Schmidt 08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	6.4	DEP FT1100	0.1	0.1		08/23/12 15:13	SAS
Water Temperature	°C	27.5	DEP FT1400	0.1	0.1		08/23/12 15:13	SAS
Specific conductance	umhos/cm	535	DEP FT1200	0.1	0.1		08/23/12 15:13	SAS
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		08/23/12 15:13	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.070	EPA 350.1	0.040	0.009		08/30/12 10:39	MMF
Ammonium as NH4	mg/L	0.09	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chloride	mg/L	18	EPA 300.0	0.20	0.050		08/30/12 10:36	JAG
Nitrate+Nitrite (N)	mg/L	7.5	EPA 353.2	0.40	0.10		08/27/12 15:55	MMF
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:19	MMF
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA3-PZ-16-N3 Groundwater 1209015-11 08/23/12 15:33 Sean Schmidt 08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	5.5	DEP FT1100	0.1	0.1		08/23/12 15:33	SAS
Water Temperature	°C	26.0	DEP FT1400	0.1	0.1		08/23/12 15:33	SAS
Specific conductance	umhos/cm	309	DEP FT1200	0.1	0.1		08/23/12 15:33	SAS
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		08/23/12 15:33	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:41	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chloride	mg/L	17	EPA 300.0	0.20	0.050		08/30/12 10:36	JAG
Nitrate+Nitrite (N)	mg/L	11	EPA 353.2	0.40	0.10		08/27/12 15:57	MMF
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:21	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA3-PZ-09-O7						
Matrix		Groundwater						
SAL Sample Number		1209015-12						
Date/Time Collected		08/24/12 07:36						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		08/24/12 07:36	SAS
Water Temperature	°C	26.7	DEP FT1400	0.1	0.1		08/24/12 07:36	SAS
Specific conductance	umhos/cm	488	DEP FT1200	0.1	0.1		08/24/12 07:36	SAS
Dissolved Oxygen	mg/L	0.9	DEP FT1500	0.1	0.1		08/24/12 07:36	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.079	EPA 350.1	0.040	0.009		08/30/12 10:43	MMF
Ammonium as NH4	mg/L	0.10	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chloride	mg/L	16	EPA 300.0	0.20	0.050		08/30/12 10:36	JAG
Nitrate+Nitrite (N)	mg/L	8.2	EPA 353.2	0.40	0.10		08/27/12 15:59	MMF
Total Kjeldahl Nitrogen	mg/L	2.3	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:23	MMF
Sample Description		TA3-PZ-16-07						
Matrix		Groundwater						
SAL Sample Number		1209015-13						
Date/Time Collected		08/24/12 07:55						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1		08/24/12 07:55	SAS
Water Temperature	°C	25.8	DEP FT1400	0.1	0.1		08/24/12 07:55	SAS
Specific conductance	umhos/cm	291	DEP FT1200	0.1	0.1		08/24/12 07:55	SAS
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		08/24/12 07:55	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:45	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chloride	mg/L	13	EPA 300.0	0.20	0.050		08/30/12 10:36	JAG
Nitrate+Nitrite (N)	mg/L	8.1	EPA 353.2	0.40	0.10		08/27/12 16:02	MMF
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:24	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected		TA3-PZ-09-I7 Groundwater 1209015-14 08/23/12 07:34						
Collected by Date/Time Received		Sean Schmidt 08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		08/23/12 07:34	SAS
Water Temperature	°C	26.6	DEP FT1400	0.1	0.1		08/23/12 07:34	SAS
Specific conductance	umhos/cm	882	DEP FT1200	0.1	0.1		08/23/12 07:34	SAS
Dissolved Oxygen	mg/L	3.3	DEP FT1500	0.1	0.1		08/23/12 07:34	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.012 I	EPA 350.1	0.040	0.009		08/30/12 10:47	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chloride	mg/L	14	EPA 300.0	0.20	0.050		08/30/12 10:36	JAG
Nitrate+Nitrite (N)	mg/L	7.9	EPA 353.2	0.40	0.10		08/27/12 16:04	MMF
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:26	MMF
Sample Description		TA3-PZ-16-I7						
Matrix		Groundwater						
SAL Sample Number		1209015-15						
Date/Time Collected		08/23/12 07:53						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	5.9	DEP FT1100	0.1	0.1		08/23/12 07:53	SAS
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		08/23/12 07:53	SAS
Specific conductance	umhos/cm	294	DEP FT1200	0.1	0.1		08/23/12 07:53	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/23/12 07:53	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:48	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chloride	mg/L	8.9	EPA 300.0	0.20	0.050		08/30/12 10:36	JAG
Nitrate+Nitrite (N)	mg/L	5.2	EPA 353.2	0.40	0.10		08/27/12 16:06	MMF
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:28	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA3-PZ-09-M9 Groundwater 1209015-16 08/23/12 16:28 Sean Schmidt 08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	6.4	DEP FT1100	0.1	0.1		08/23/12 16:28	SAS
Water Temperature	°C	27.4	DEP FT1400	0.1	0.1		08/23/12 16:28	SAS
Specific conductance	umhos/cm	456	DEP FT1200	0.1	0.1		08/23/12 16:28	SAS
Dissolved Oxygen	mg/L	1.0	DEP FT1500	0.1	0.1		08/23/12 16:28	SAS
Inorganics	_							
Ammonia as N	mg/L	0.017 I	EPA 350.1	0.040	0.009		08/30/12 10:50	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chloride	mg/L	15	EPA 300.0	0.20	0.050		08/30/12 10:36	JAG
Nitrate+Nitrite (N)	mg/L	8.2	EPA 353.2	0.40	0.10		08/27/12 16:08	MMF
Total Kjeldahl Nitrogen	mg/L	2.7	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:32	MMF
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA3-PZ-16-M9 Groundwater 1209015-17 08/23/12 16:47 Sean Schmidt 08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	5.4	DEP FT1100	0.1	0.1		08/23/12 16:47	SAS
Water Temperature	°C	26.4	DEP FT1400	0.1	0.1		08/23/12 16:47	SAS
Specific conductance	umhos/cm	286	DEP FT1200	0.1	0.1		08/23/12 16:47	SAS
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		08/23/12 16:47	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:52	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chloride	mg/L	9.9	EPA 300.0	0.20	0.050		08/30/12 10:36	JAG
Nitrate+Nitrite (N)	mg/L	6.0	EPA 353.2	0.40	0.10		08/27/12 16:11	MMF
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:33	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA3-PZ-09-ST14 Groundwater 1209015-18 08/24/12 08:19 Sean Schmidt 08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	4.6	DEP FT1100	0.1	0.1		08/24/12 08:19	SAS
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		08/24/12 08:19	SAS
Specific conductance	umhos/cm	218	DEP FT1200	0.1	0.1		08/24/12 08:19	SAS
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		08/24/12 08:19	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:53	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chloride	mg/L	4.9	EPA 300.0	0.20	0.050		08/30/12 10:36	JAG
Nitrate+Nitrite (N)	mg/L	5.0	EPA 353.2	0.40	0.10		08/29/12 13:04	MMF
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:35	MMF
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA3-PZ-16-ST14 Groundwater 1209015-19 08/24/12 08:32 Sean Schmidt 08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	5.1	DEP FT1100	0.1	0.1		08/24/12 08:32	SAS
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		08/24/12 08:32	SAS
Specific conductance	umhos/cm	273	DEP FT1200	0.1	0.1		08/24/12 08:32	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/24/12 08:32	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:55	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chloride	mg/L	9.2	EPA 300.0	0.20	0.050		08/31/12 10:32	JAG
Nitrate+Nitrite (N)	mg/L	6.6	EPA 353.2	0.40	0.10		08/29/12 13:06	MMF
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:36	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA3-PZ-09-ST16						
Matrix		Groundwater						
SAL Sample Number		1209015-20						
Date/Time Collected		08/24/12 08:52						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	5.7	DEP FT1100	0.1	0.1		08/24/12 08:52	SAS
Water Temperature	°C	27.1	DEP FT1400	0.1	0.1		08/24/12 08:52	SAS
Specific conductance	umhos/cm	313	DEP FT1200	0.1	0.1		08/24/12 08:52	SAS
Dissolved Oxygen	mg/L	1.5	DEP FT1500	0.1	0.1		08/24/12 08:52	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.011 I	EPA 350.1	0.040	0.009		08/30/12 10:15	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chloride	mg/L	5.7	EPA 300.0	0.20	0.050		08/31/12 10:32	JAG
Nitrate+Nitrite (N)	mg/L	5.7	EPA 353.2	0.40	0.10		08/29/12 13:09	MMF
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:37	MMF
Sample Description		TA3-PZ-16-ST16						
Matrix		Groundwater						
SAL Sample Number		1209015-21						
Date/Time Collected		08/24/12 09:16						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		08/24/12 09:16	SAS
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		08/24/12 09:16	SAS
Specific conductance	umhos/cm	262	DEP FT1200	0.1	0.1		08/24/12 09:16	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/24/12 09:16	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:17	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Chloride	mg/L	8.1	EPA 300.0	0.20	0.050		09/01/12 10:29	JAG
Nitrate+Nitrite (N)	mg/L	5.8	EPA 353.2	0.40	0.10		08/29/12 13:11	MMF
Total Kjeldahl Nitrogen	mg/L	0.69	EPA 351.2	0.20	0.05	08/27/12 08:34	08/28/12 14:38	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22305 - COD prep										
Blank (BH22305-BLK1)					Prepared:	08/23/12 Ar	nalyzed: 08	/24/12		
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH22305-BS1)					Prepared:	08/23/12 Ar	nalyzed: 08	/24/12		
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BH22305-MS1)		Source: 1	209016-01		Prepared:	08/23/12 Ar	nalyzed: 08	/24/12		
Chemical Oxygen Demand	54	25	10	mg/L	50	11	86	85-115		
Matrix Spike Dup (BH22305-MSD1)	Source: 1	209016-01		Prepared:	08/23/12 Ar	nalyzed: 08	/24/12		
Chemical Oxygen Demand	56	25	10	mg/L	50	11	90	85-115	4	32
Batch BH22407 - Ion Chromate	ography 300.0	Prep								
Blank (BH22407-BLK1)					Prepared 8	& Analyzed:	08/24/12			
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH22407-BS1)					Prepared 8	& Analyzed:	08/24/12			
Sulfate	8.87	0.60	0.20	mg/L	9.0		99	85-115		
Chloride	2.92	0.20	0.050	mg/L	3.0		97	85-115		
Orthophosphate as P	0.982	0.040	0.010	mg/L	0.90		109	85-115		
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115		
Fluoride	0.843	0.040	0.010	mg/L	0.90		94	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22407 - Ion Chroma	tography 300.0) Prep								
LCS Dup (BH22407-BSD1)					Prepared 8	& Analyzed:	08/24/12			
Orthophosphate as P	0.981	0.040	0.010	mg/L	0.90		109	85-115	0.1	200
Sulfate	8.79	0.60	0.20	mg/L	9.0		98	85-115	0.9	200
Fluoride	0.896	0.040	0.010	mg/L	0.90		100	85-115	6	200
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	0.6	200
Chloride	2.88	0.20	0.050	mg/L	3.0		96	85-115	1	200
Matrix Spike (BH22407-MS1)		Source: 1	209508-01		Prepared 8	& Analyzed:	08/24/12			
Fluoride	1.04	0.040	0.010	mg/L	0.90	0.172	96	85-115		
Sulfate	8.98	0.60	0.20	mg/L	9.0	ND	100	85-115		
Nitrate (as N)	2.61	0.04	0.01	mg/L	1.7	0.812	106	85-115		
Chloride	21.8	0.20	0.050	mg/L	3.0	18.2	120	80-120		
Orthophosphate as P	1.12	0.040	0.010	mg/L	0.90	0.127	110	85-115		
Matrix Spike (BH22407-MS2)		Source: 1	209550-01		Prepared 8	& Analyzed:	08/24/12			
Chloride	14.6	0.20	0.050	mg/L	3.0	11.1	117	80-120		
Fluoride	1.08	0.040	0.010	mg/L	0.90	0.211	97	85-115		
Nitrate (as N)	1.79	0.04	0.01	mg/L	1.7	0.0285	104	85-115		
Orthophosphate as P	0.860	0.040	0.010	mg/L	0.90	ND	96	85-115		
Sulfate	9.68	0.60	0.20	mg/L	9.0	0.812	99	85-115		
Batch BH22408 - Ion Chroma	tography 300.0) Prep								
Blank (BH22408-BLK1)					Prepared 8	& Analyzed:	08/24/12			
Fluoride	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
				-						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619

September 10, 2012 Work Order: 1209015

Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22408 - Ion Chroma	tography 300.0	Prep								
LCS (BH22408-BS1)					Prepared 8	& Analyzed:	08/24/12			
Chloride	2.92	0.20	0.050	mg/L	3.0		97	85-115		
Sulfate	8.88	0.60	0.20	mg/L	9.0		99	85-115		
Nitrate (as N)	1.70	0.04	0.01	mg/L	1.7		100	85-115		
Orthophosphate as P	0.975	0.040	0.010	mg/L	0.90		108	85-115		
Fluoride	0.975	0.040	0.010	mg/L	0.90		108	85-115		
LCS Dup (BH22408-BSD1)					Prepared 8	& Analyzed:	08/24/12			
Nitrate (as N)	1.67	0.04	0.01	mg/L	1.7		98	85-115	2	200
Chloride	2.90	0.20	0.050	mg/L	3.0		97	85-115	0.7	200
Fluoride	0.950	0.040	0.010	mg/L	0.90		106	85-115	3	200
Orthophosphate as P	0.925	0.040	0.010	mg/L	0.90		103	85-115	5	200
Sulfate	8.69	0.60	0.20	mg/L	9.0		97	85-115	2	200
Matrix Spike (BH22408-MS1)		Source: 1	209567-01		Prepared 8	& Analyzed:				
Nitrate (as N)	3.72	0.04	0.01	mg/L	1.7	1.84	111	85-115		
Fluoride	1.02	0.040	0.010	mg/L	0.90	0.0692	106	85-115		
Orthophosphate as P	4.71	0.040	0.010	mg/L	0.90	3.78	103	85-115		
Chloride	41.2 +O	0.20	0.050	mg/L	3.0	40.1	37	80-120		
Sulfate	44.7	0.60	0.20	mg/L	9.0	35.5	102	85-115		
Matrix Spike (BH22408-MS2)		Source: 1	209571-03		Prepared 8	& Analyzed:	08/24/12			
Nitrate (as N)	2.20	0.04	0.01	mg/L	1.7	0.410	105	85-115		
Orthophosphate as P	6.88	0.040	0.010	mg/L	0.90	6.01	97	85-115		
Sulfate	34.6	0.60	0.20	mg/L	9.0	25.0	107	85-115		
Chloride	44.5 +O	0.20	0.050	mg/L	3.0	43.9	20	80-120		
Fluoride	1.05	0.040	0.010	mg/L	0.90	0.118	104	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22415 - Digestion fo	r TP by EPA 36	65.2/SM4500)PE							
Blank (BH22415-BLK1)					Prepared:	08/24/12 Aı	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22415-BS1)					Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.754	0.040	0.010	mg/L	0.80		94	90-110		
Matrix Spike (BH22415-MS1)		Source: 1	209476-08	1	Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.933	0.040	0.010	mg/L	1.0	ND	93	75-125		
Matrix Spike Dup (BH22415-MSD	1)	Source: 1	209476-08	}	Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.901	0.040	0.010	mg/L	1.0	ND	90	75-125	3	25
Batch BH22504 - alkalinity										
Blank (BH22504-BLK1)					Prepared:	08/25/12 Aı	nalyzed: 08	/27/12		
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22504-BS1)					Prepared:	08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22504-MS1)		Source: 1	209007-03	;	Prepared:	08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	290	8.0	2.0	mg/L	120	170	95	80-120		
Matrix Spike Dup (BH22504-MSD	1)	Source: 1	209007-03	1	Prepared:	08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	290	8.0	2.0	mg/L	120	170	95	80-120	0	26
Batch BH22702 - Digestion fo	r TKN by EPA	351.2								
Blank (BH22702-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Allalyte	Result	FQL	IVIDE	Office	Levei	Result	/0KLC	LIIIIII	KFD	LIIIII
Batch BH22702 - Digestion fo	r TKN by EPA	351.2								
LCS (BH22702-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	2.30	0.20	0.05	mg/L	2.5		91	90-110		
Matrix Spike (BH22702-MS1)		Source: 1	209020-20	ı	Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	3.69	0.20	0.05	mg/L	2.5	1.14	101	80-120		
Matrix Spike Dup (BH22702-MSD	1)	Source: 1	209020-20		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	3.50	0.20	0.05	mg/L	2.5	1.14	93	80-120	5	20
Batch BH22703 - Digestion fo	r TKN by EPA	351.2								
Blank (BH22703-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22703-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	2.48	0.20	0.05	mg/L	2.5		98	90-110		
Matrix Spike (BH22703-MS1)		Source: 1	209015-06	i	Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	4.19	0.20	0.05	mg/L	2.5	1.38	111	80-120		
Matrix Spike Dup (BH22703-MSD	1)	Source: 1	209015-06	i	Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	3.78	0.20	0.05	mg/L	2.5	1.38	95	80-120	10	20
Batch BH22711 - COD prep										
Blank (BH22711-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Chemical Oxygen Demand	10 U	25	10	mg/L		<u> </u>	<u> </u>			

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22711 - COD prep										
LCS (BH22711-BS1)					Prepared 8	k Analyzed:	08/27/12			
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BH22711-MS1)		Source: 1	209016-05		Prepared 8	& Analyzed:	08/27/12			
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115		
Matrix Spike Dup (BH22711-MSD	1)	Source: 1	209016-05		Prepared 8	k Analyzed:	08/27/12			
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115	0	32
Batch BH22717 - Nitrate 353.2	2 by seal									
Blank (BH22717-BLK1)					Prepared 8	k Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22717-BS1)					Prepared 8	k Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.846	0.04	0.01	mg/L	0.80		106	90-110		
Matrix Spike (BH22717-MS1)		Source: 1	208986-04	•	Prepared 8	k Analyzed:	08/27/12			
Nitrate+Nitrite (N)	21.2	0.40	0.10	mg/L	10	12.1	91	77-119		
Matrix Spike Dup (BH22717-MSD	1)	Source: 1	208986-04		Prepared 8	k Analyzed:	08/27/12			
Nitrate+Nitrite (N)	21.1	0.40	0.10	mg/L	10	12.1	91	77-119	0.3	20
Batch BH22723 - TOC prep										
Blank (BH22723-BLK1)					Prepared 8	& Analyzed:	08/29/12			
Total Organic Carbon	0.50 U	1.0	0.50	mg/L			·		·	

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22723 - TOC prep										
LCS (BH22723-BS1)					Prepared 8	& Analyzed:	08/29/12			
Total Organic Carbon	10.0	1.0	0.50	mg/L	10		100	90-110		
Matrix Spike (BH22723-MS1)		Source: 1	209015-06	i	Prepared 8	& Analyzed:	08/29/12			
Total Organic Carbon	10.1	1.0	0.50	mg/L	10	1.45	86	85-115		
Matrix Spike Dup (BH22723-MSD	1)	Source: 1	209015-06	;	Prepared 8	& Analyzed:	08/29/12			
Total Organic Carbon	11.1	1.0	0.50	mg/L	10	1.45	96	85-115	10	10
Batch BH22825 - alkalinity										
Blank (BH22825-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22825-BS1)					Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22825-MS1)		Source: 1	209020-06	;	Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	130	8.0	2.0	mg/L	120	4.2	100	80-120		
Matrix Spike Dup (BH22825-MSD	1)	Source: 1	209020-06	i	Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	130	8.0	2.0	mg/L	120	4.2	100	80-120	0	26
Batch BH22841 - Ammonia by	SEAL									
Blank (BH22841-BLK1)					Prepared 8	& Analyzed:	08/29/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22841 - Ammonia b	y SEAL									
LCS (BH22841-BS1)					Prepared 8	k Analyzed:	08/29/12			
Ammonia as N	0.51	0.040	0.009	mg/L	0.50		102	90-110		
Matrix Spike (BH22841-MS1)		Source: 1	209404-07		Prepared 8	& Analyzed:	08/29/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	0.042	90	90-110		
Matrix Spike Dup (BH22841-MSI	01)	Source: 1	209404-07		Prepared 8	k Analyzed:	08/29/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.042	92	90-110	2	10
Batch BH22843 - Nitrate 353	2 by seal									
Blank (BH22843-BLK1)					Prepared 8	k Analyzed:	08/29/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22843-BS1)					Prepared 8	k Analyzed:	08/29/12			
Nitrate+Nitrite (N)	0.832	0.04	0.01	mg/L	0.80		104	90-110		
Matrix Spike (BH22843-MS1)		Source: 1	209476-03		Prepared 8	k Analyzed:	08/29/12			
Nitrate+Nitrite (N)	1.22	0.04	0.01	mg/L	1.0	0.0664	115	77-119		
Matrix Spike Dup (BH22843-MSI	01)	Source: 1	209476-03		Prepared 8	k Analyzed:	08/29/12			
Nitrate+Nitrite (N)	1.22	0.04	0.01	mg/L	1.0	0.0664	116	77-119	0.4	20
Batch BH22910 - Ion Chroma	atography 300.0	Prep								
Blank (BH22910-BLK1)					Prepared 8	& Analyzed:	08/30/12			
Chloride	0.050 U	0.20	0.050	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

				Spike	Source		%REC		RPD
Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
ography 300.0	Prep								
				Prepared 8	Analyzed:	08/30/12			
2.87	0.20	0.050	mg/L	3.0		96	85-115		
				Prepared 8	Analyzed:	08/30/12			
2.88	0.20	0.050	mg/L	3.0		96	85-115	0.3	200
	Source: 1	209015-13		Prepared 8	Analyzed:	08/30/12			
14.0	0.20	0.050	mg/L		13.1			7	10
	Source: 1	209015-18		Prepared 8	Analyzed:	08/30/12			
8.04	0.20	0.050	mg/L	3.0	4.90	105	80-120		
SEAL									
				Prepared 8	Analyzed:	08/30/12			
0.009 U	0.040	0.009	mg/L						
				Prepared 8	Analyzed:	08/30/12			
0.50	0.040	0.009	mg/L	0.50		100	90-110		
	Source: 1	209015-07		Prepared 8	Analyzed:	08/30/12			
0.48	0.040	0.009	mg/L	0.50	ND	96	90-110		
)	Source: 1	209015-07		Prepared 8	Analyzed:	08/30/12			
0.50	0.040	0.009	mg/L	0.50	ND	99	90-110	4	10
SEAL									
				Prepared 8	Analyzed:	08/30/12			
0.009 U	0.040	0.009	mg/L						
	2.87 2.88 14.0 8.04 SEAL 0.009 U 0.50 0.48) 0.50 SEAL	2.87 0.20 2.88 0.20 Source: 1 14.0 0.20 Source: 1 8.04 0.20 SEAL 0.009 U 0.040 Source: 1 0.48 0.040) Source: 1 0.50 0.040 Source: 1 0.50 0.040 Source: 1 0.50 0.040 Source: 1	2.87 0.20 0.050 2.88 0.20 0.050 Source: 1209015-13 14.0 0.20 0.050 Source: 1209015-18 8.04 0.20 0.050 SEAL 0.009 U 0.040 0.009 Source: 1209015-07 0.48 0.040 0.009 Source: 1209015-07 0.50 0.040 0.009 Source: 1209015-07 0.50 0.040 0.009 Source: 1209015-07 0.50 0.040 0.009	2.87 0.20 0.050 mg/L 2.88 0.20 0.050 mg/L Source: 1209015-13 14.0 0.20 0.050 mg/L Source: 1209015-18 8.04 0.20 0.050 mg/L SEAL 0.009 U 0.040 0.009 mg/L Source: 1209015-07 0.48 0.040 0.009 mg/L Source: 1209015-07 0.50 0.040 0.009 mg/L Source: 1209015-07 0.50 0.040 0.009 mg/L Source: 1209015-07	Result PQL MDL Units Level	Result PQL MDL Units Level Result	Result PQL MDL Units Level Result %REC	Result PQL MDL Units Level Result %REC Limits	Result PQL MDL Units Level Result %REC Limits RPD

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22931 - Ammonia by	SEAL									
LCS (BH22931-BS1)					Prepared 8	k Analyzed:	08/30/12			
Ammonia as N	0.48	0.040	0.009	mg/L	0.50		96	90-110		
Matrix Spike (BH22931-MS1)		Source: 1	209015-20		Prepared 8	& Analyzed:	08/30/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.011	98	90-110		
Matrix Spike Dup (BH22931-MSD	1)	Source: 1	209015-20		Prepared 8	& Analyzed:	08/30/12			
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	0.011	100	90-110	2	10
Batch BH23020 - Ion Chromat	tography 300.0	Prep								
Blank (BH23020-BLK1)					Prepared 8	& Analyzed:	08/31/12			
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH23020-BS1)					Prepared 8	k Analyzed:	08/31/12			
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115		
LCS Dup (BH23020-BSD1)					Prepared 8	k Analyzed:	08/31/12			
Chloride	2.92	0.20	0.050	mg/L	3.0		97	85-115	1	200
Matrix Spike (BH23020-MS1)		Source: 1	209015-20		Prepared 8	k Analyzed:	08/31/12			
Chloride	8.76	0.20	0.050	mg/L	3.0	5.69	102	80-120		
Batch BH23108 - Ion Chromat	tography 300.0	Prep								
Blank (BH23108-BLK1)					Prepared 8	& Analyzed:	09/01/12			
Chloride	0.050 U	0.20	0.050	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH23108 - Ion Chroma	tography 300.0	Prep								
LCS (BH23108-BS1)					Prepared 8	& Analyzed:	09/01/12			
Chloride	2.96	0.20	0.050	mg/L	3.0		99	85-115		
LCS Dup (BH23108-BSD1)					Prepared 8	& Analyzed:	09/01/12			
Chloride	2.92	0.20	0.050	mg/L	3.0		97	85-115	1	200
Matrix Spike (BH23108-MS1)		Source: 1	1209852-02		Prepared 8	& Analyzed:	09/01/12			
Chloride	42.2 +O	0.20	0.050	mg/L	3.0	42.1	3	80-120		
Matrix Spike (BH23108-MS2)		Source: 1	1209018-01		Prepared 8	& Analyzed:	09/01/12			
Chloride	22.4	0.20	0.050	mg/L	3.0	19.7	90	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Batch BH22124 - TOC prep										
Blank (BH22124-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BH22124-BS1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.2	1.0	0.50	mg/L	10		102	90-110		
Matrix Spike (BH22124-MS1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.0	1.0	0.50	mg/L	10	ND	100	85-125		
Matrix Spike Dup (BH22124-MSD1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	9.67	1.0	0.50	mg/L	10	ND	97	85-125	4	25

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22402 - Metals Pro	eparation for EPA	Method 20	00.7							
Blank (BH22402-BLK1)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Iron	0.020 U	0.10	0.020	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Sodium	0.13 U	0.50	0.13	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Potassium	0.010 U	0.050	0.010	mg/L						
Magnesium	0.041 I	0.50	0.020	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Blank (BH22402-BLK2)					Prepared:	08/24/12 Ar	nalyzed: 08	/30/12		
Manganese	0.010 V	0.010	0.0010	mg/L						
Potassium	0.79 V	0.050	0.010	mg/L						
Magnesium	0.20	0.50	0.020	mg/L						
Boron	0.33 V	0.10	0.050	mg/L						
Sodium	00,000,000 V	0.50	0.13	mg/L						
Calcium	0.89 V	0.50	0.042	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
LCS (BH22402-BS1)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Magnesium	22	0.50	0.020	mg/L	20		108	85-115		
Sodium	21	0.50	0.13	mg/L	20		107	85-115		
Calcium	22	0.50	0.042	mg/L	20		108	85-115		
Manganese	0.39	0.010	0.0010	mg/L	0.40		99	85-115		
Boron	0.40	0.10	0.050	mg/L	0.40		100	85-115		
Iron	8.3	0.10	0.020	mg/L	8.0		104	85-115		
Potassium	21	0.050	0.010	mg/L	20		105	85-115		
Matrix Spike (BH22402-MS1)		Source: 1	209463-02		Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Boron	0.42	0.10	0.050	mg/L	0.40	ND	106	70-130		
Calcium	110	0.50	0.042	mg/L	20	91	116	70-130		
Sodium	28	0.50	0.13	mg/L	20	6.8	108	70-130		
Magnesium	23	0.50	0.020	mg/L	20	1.8	107	70-130		
Manganese	0.40	0.010	0.0010	mg/L	0.40	ND	100	70-130		
Iron	8.3	0.10	0.020	mg/L	8.0	ND	104	70-130		
Potassium	22	0.050	0.010	mg/L	20	0.29	108	70-130		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22402 - Metals Prepa	aration for EPA	Method 20	00.7							
Matrix Spike (BH22402-MS2)		Source: 1	209469-01		Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Calcium	20	0.50	0.042	mg/L	20	0.76	97	70-130		
Magnesium	19	0.50	0.020	mg/L	20	0.33	94	70-130		
Manganese	0.38	0.010	0.0010	mg/L	0.40	0.0018	93	70-130		
Boron	0.47	0.10	0.050	mg/L	0.40	0.061	101	70-130		
Potassium	51 J5	0.050	0.010	mg/L	20	20	158	70-130		
Sodium	0.13 U,J5	0.50	0.13	mg/L	20	ND		70-130		
Iron	7.5	0.10	0.020	mg/L	8.0	0.063	93	70-130		
Matrix Spike Dup (BH22402-MSD	1)	Source: 1	209463-02		Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Magnesium	22	0.50	0.020	mg/L	20	1.8	101	70-130	5	30
Potassium	21	0.050	0.010	mg/L	20	0.29	101	70-130	6	30
Calcium	110	0.50	0.042	mg/L	20	91	112	70-130	0.8	30
Sodium	28	0.50	0.13	mg/L	20	6.8	108	70-130	0.4	30
Manganese	0.39	0.010	0.0010	mg/L	0.40	ND	98	70-130	2	30
Boron	0.41	0.10	0.050	mg/L	0.40	ND	103	70-130	3	30
Iron	8.0	0.10	0.020	mg/L	8.0	ND	101	70-130	3	30
Matrix Spike Dup (BH22402-MSD	2)	Source: 1	209469-01		Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Calcium	20	0.50	0.042	mg/L	20	0.76	96	70-130	0.9	30
Potassium	50 J5	0.050	0.010	mg/L	20	20	148	70-130	4	30
Boron	0.47	0.10	0.050	mg/L	0.40	0.061	102	70-130	0.6	30
Iron	7.6	0.10	0.020	mg/L	8.0	0.063	94	70-130	1	30
Sodium	0.13 U,J5	0.50	0.13	mg/L	20	ND		70-130		30
Magnesium	19	0.50	0.020	mg/L	20	0.33	94	70-130	0.04	30
Manganese	0.37	0.010	0.0010	mg/L	0.40	0.0018	93	70-130	0.3	30
Batch BH22403 - Metals Prepa	aration for EPA	Method 20	0.7							
Blank (BH22403-BLK1)					Prepared 8	& Analyzed:	08/29/12			
Sodium	0.13 U	0.50	0.13	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Potassium	0.010 U	0.050	0.010	mg/L						
Magnesium	0.020 U	0.50	0.020	mg/L						
- 5										

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22403 - Metals Preparati	on for EPA	Method 20	0.7							
LCS (BH22403-BS1)					Prepared 8	k Analyzed: (08/29/12			
Boron	0.39	0.10	0.050	mg/L	0.40		98	85-115		
Magnesium	20	0.50	0.020	mg/L	20		98	85-115		
Calcium	20	0.50	0.042	mg/L	20		99	85-115		
Sodium	20	0.50	0.13	mg/L	20		99	85-115		
Potassium	18	0.050	0.010	mg/L	20		92	85-115		
Manganese	0.39	0.010	0.0010	mg/L	0.40		98	85-115		
Iron	7.8	0.10	0.020	mg/L	8.0		98	85-115		
Matrix Spike (BH22403-MS1)		Source: 1	209534-01		Prepared 8	k Analyzed: (08/29/12			
Manganese	0.39	0.010	0.0010	mg/L	0.40	0.0016	97	70-130		
Magnesium	59	0.50	0.020	mg/L	20	39	101	70-130		
Sodium	210	0.50	0.13	mg/L	20	200	41	70-130		
Potassium	35	0.050	0.010	mg/L	20	16	95	70-130		
Boron	0.64	0.10	0.050	mg/L	0.40	0.23	100	70-130		
Iron	7.8	0.10	0.020	mg/L	8.0	0.023	98	70-130		
Calcium	72	0.50	0.042	mg/L	20	53	99	70-130		
Matrix Spike (BH22403-MS2)		Source: 1	209547-02		Prepared 8	k Analyzed: (08/29/12			
Manganese	0.46	0.010	0.0010	mg/L	0.40	0.072	97	70-130		
Boron	0.43	0.10	0.050	mg/L	0.40	ND	108	70-130		
Magnesium	24	0.50	0.020	mg/L	20	4.5	99	70-130		
Sodium	29	0.50	0.13	mg/L	20	8.5	102	70-130		
Calcium	25	0.50	0.042	mg/L	20	5.9	97	70-130		
Potassium	23	0.050	0.010	mg/L	20	3.8	97	70-130		
Iron	9.9	0.10	0.020	mg/L	8.0	1.9	100	70-130		
Matrix Spike Dup (BH22403-MSD1)		Source: 1	209534-01		Prepared 8	k Analyzed: (08/29/12			
Sodium	220	0.50	0.13	mg/L	20	200	84	70-130	4	30
Manganese	0.39	0.010	0.0010	mg/L	0.40	0.0016	96	70-130	0.7	30
Boron	0.64	0.10	0.050	mg/L	0.40	0.23	101	70-130	0.2	30
Magnesium	61	0.50	0.020	mg/L	20	39	110	70-130	3	30
Calcium	75	0.50	0.042	mg/L	20	53	112	70-130	3	30
Potassium	36	0.050	0.010	mg/L	20	16	97	70-130	1	30
Iron	7.8	0.10	0.020	mg/L	8.0	0.023	97	70-130	1	30

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

Metals - Quality Control

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit

Batch BH22403 - Metals Preparation for EPA Method 200.7

Matrix Spike Dup (BH22403-MSD2))	Source: 1	209547-02		Prepared 8	& Analyzed: (08/29/12			
Manganese	0.45	0.010	0.0010	mg/L	0.40	0.072	93	70-130	3	30
Boron	0.42	0.10	0.050	mg/L	0.40	ND	104	70-130	3	30
Calcium	25	0.50	0.042	mg/L	20	5.9	96	70-130	8.0	30
Potassium	23	0.050	0.010	mg/L	20	3.8	98	70-130	0.9	30
Iron	9.8	0.10	0.020	mg/L	8.0	1.9	99	70-130	8.0	30
Sodium	29	0.50	0.13	mg/L	20	8.5	103	70-130	0.5	30
Magnesium	24	0.50	0.020	mg/L	20	4.5	99	70-130	0.04	30

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209015

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

- V Analyte was detected in both the sample and the associated method blank.
- J5 Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.
- +O Matrix spike source sample was over the reccommended range for the method.

Finder



SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLD SMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name										Cont	Contact / Phone:	ioi						
Droised Name / comply	Hazen	Hazen and Sawyer																T
rioject name / Locatori	S&GW	S&GW Test Facility SE#2	y SE#2															****
Samplers: (Signature)	*	7				8			PARAMETER / CONTAINER DESCRIPTION	ER / CO	TAINER	DESCRIPT	NO.	·				
Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water	'astewater le SO-Soil ater O-Other					т, сор, тР н₄, сор, тР			IO3		[†] H [†] OS							
Sample Description	xtion	Date	əmiT	xintsM	Composite Grab	1LP, Cool TKN, NOx, N 250mL P, H ₂ 5	CI, Alkalinity, SO₄	40mΓaV, HCI DOC	TOC 250mL P, HN	1LP, Cool	250mL P, H ₂	1LP, Cool Cl		DO	Hq	Conductivity	Temperature	No. of Contai per each locs
01 TA3-PZ-11-EF2		0823R	8480	QW.	×	-	-	1 2	-					5.03	4.9	LA 60%.	+·L3	
			0160	GW	×	-	-	1	-					30843		34 C1.4	1.4	
03 TA3-PZ-10-J5			1020	GW	×	-				1				2.05 4.3		308 2	26.9	
04 TA3-PZ-10-J5 DUP			5201	GW	×	-				1				2.05	4.3	302	7.05	
05 TA3-PZ-10-K5			DS01	МĐ	×	1				-				7.884.7		724 27.0	7.0	
06 TA3-PZ-11-L2		่น ร่ว80	1546	МЭ	×	1	1	1 2	1					1.104	V	858.927.7	2.7	
07 TA3-PZ-11-L3		- dos	1405	ВW	×	-				-				05.7	1.304.3355.4274	53.02	74	
08 TA3-PZ-11-L4		9530215180	9530	GW	×	1				1				e.25	44 >56 27x	562	7.2	
09 TA3-PZ-10-L5		182312 0957	1560	GW	×	1				1				1.454.8		746 27.1	1.7	
10 TA3-PZ-09-N3			1513	GW	×						-	-		0.726.4		5752	27.5	
11 TA3-PZ-16-N3			1533	GW	×						-	1		6.27	5.5	308# 24.0	2.5	
12 TA3-PZ-09-07		25 mil	75.12	ВW	×						1	1		U.77 6.	و	488 24.7	2	
Containers Prepared/ Relinquished	1920	Received:	X	JA.	Date/Time: 79	V 0	0 0	Se	Seal intact?			z ≻	©					
Relinquished:		Redeived:		7	Date/Time:	3	/ a	S.	Samples intact upon arrival?	on arrival'		Š						
A Col	ا ہے ~	圭)		õ	08-24-N	٨	, Š	Received on ice? Temp	Temp		ž Š						
Relinquished:	Date/Time:	Received		<u>. </u>	Date/Time:			-E	Proper preservatives indicated?	ves indica	ed?	Ø N N	¥					
Relinquished:	Date/Time:	Received:			Date/Time:			å ş	Rec'd within holding time? Volatiles rec'd w/out headspace?	ng time? out headsp	yace?	Z Z Z	₹ 3					
Relinquished:	'Date/Time:	Received:			Date/Time:			& 	Proper containers used?	pesn :		\mathcal{S}	¥ X				1206	1209015
Chain of Custody, 4s Rev.Date 11/19/01				-								Chai	Chain of Custody	λ́ρ				

SAL Project No. 1209015

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLD SWAR, FL 34877 813-855-1844 fax 813-855-2218

Client Name									Cor	Contact / Phone:						
	ı.	Hazen a	Hazen and Sawyer									ļ				
Project Nar	Project Name / Location															
		S&GWT	S&GW Test Facility SE#2	y SE#2		ļ										
Samplers: (Signature)	(Signature)	M	1	H					PARAMETER / CONTAINER DESCRIPTION	ONTAINER DE	SCRIPTION				-	
SV.	Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water R-Reagent Water	istewater SO-Soil ter O-Other												٨		tainers (Total
E STATE			əte	əmij	xints№	Somposite ds16	250mL P, H ₂ TKN, NOx, N	12P, Cool				DO	Hq	Conductivit	Temperatu	No. of Con per each lo
13 TA3	TA3_P7_16_07		2824 rz	0	GW	_) -				047	7.7	8:58 A18	30	
	TA3-PZ-09-17		275750	46.10		×	-	-				3.31	70	268	24.6	
	TA3-PZ-16-17		_	0753		×	-	1				6	20	293.625.7	15.7	\neg
	TA3-PZ-09-M9		यद्य			×	-	1				101	1.0	45627.4	7.4	
	TA3-PZ-16-M9		_	1649	ВW	×	1	-				१८ ४	4.2	5.4 286.5 alit	£(5,4)	
	TA3-P7-09-ST14		114250		Νg	×	-	-				6.4	0. 45 4. (e 215,026.)	220	2.97	
T	TA3-P7-16-ST14			2580	M9	×	-	-				<u>a</u> 3	038/5.1	22.725.9	23.6	
_	TA3-PZ-09-ST16			0252	GW	×	-					1,5			7.1	
	TA3-P7-16-ST16			2016	ΝS	×	-	-				925	225	6.52.5296	5.52	
															_	
Containers Prepared		Date/Time: P28	Received:		1	Date/Time:		0,0	Seal intact?		Z ×					
	albowing	8/18/12				טי	8/80		Samples intact upon arrival?	Çlev) <u>\$</u>					
Relinquished	10 1	Date/Time/1300	Reg	, ,		Date/Tim		1330	Received on ice? Temp		§ ∠ ∑					
Refinquished	7	N	Received:	8		Date/Tim	Date/Time:		Proper preservatives indicated?	licated?	Š Š					
Relinquished:		Date/Time:	Received:			Date/Time:			Rec'd within holding time?	i?	§ €					
Relinquished:		Date/Time:	Received:			Date/Time:			Proper containers used?) _§ Š				, .	1209015
Chain of Custody.xls Rev.Date 11/1901	4-										Chain of Custody	stody				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

_			GR	OUNDV	VATER S	SAMPLI	NG LO				
Client Name:	F	lazen and Sawye	r	Location:				Contact: Phone:			
Date Sampled	O	82312		SAL Project #	120	9015		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA3-PZ-11-L2		Sample ID	(do		GPS LAT GPS LONG			
				Р	URGING	DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	7.46	PURGE PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)	*	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tecl	nnique: q Sul DLUME = (TO	omerged Screen (TAL DEPTH - ST	1,1/4,1/4 Well ATIC DEPTH)) q Submer x WELL CAPI	ged Screen (1 CITY =	EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	0.7	92	1/4 WELL VOLUME			3 WELL VOLUMES		278	5 WELL VOLUMES		
PUMP VOLUME		EQUIPMENT VO	TUBING LEGNTH	P VOLUME +	(TUBING CA	FLOW CELL VOLUME	BING LEGNIF	i) + FLOW CEL	EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	1536	PURGE TIME END	1545	TOTAL PURGED	0.90
INST.	\times	\times	\times	\supset	SAL-SAM-63		SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0_/	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1539	0.30	0.36	0110	8.02	4.7	27.7	344:3	1.17	19,2	CLEAR	NONE
1542	0.30	0.60			4.5	27. le	356.5	1.10	18.8		1
1545	0.30	0.90			4.5	27.7	359.8	1.10	18-7		
									•		£
	Well (Lapacity (gallons/t	l foot): 0.75"=0	.02, 1.25"=() 0.06, 2"=0.1	16, 3"=0.37	, 4"=0.65,	5"=1.02, 6	<u> </u> "=1.47, 12	<u>1</u> "5.88	1
TUBIN		A. CAPACITY (Ga		0.0006; 3/16"			5/16" = 0.00	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" =	0.016
044101 50 83	/ (OOMPANIX			S	AMPLIN	· · · · · · · · · · · · · · · · · · ·	PLER(S)	T		//	
SAMPLED BY (PR	// COMPANY NT)		5AL				TURES:		X		
TUBING MAT (CIRCL	ERIAL CODE E ONE)	PP PE N	ФПП		E TUBING WELL (FEET)			SAMPLE PE RATE (I			
SAMPLING INITIATED FIELD	1540 YN)	SAMPLING ENDED FILTER SIZE	1547	FIELD CLEANED DUPLICATE	Y (N)		LECTED BY	Y N MA		COLLECTED	Y N(N/A
	RVATION IN FIELD?	(μm) Y N N/A		BERVATIVES DED		REVERS	SE FLOW?		1 THROU	GH TRAP?	
WEA.	THER ITIONS	Clear	,90	,							
COM	MENTS										
		PUMP CO	DES: PP=Pe	eristaltic Pump	, GP= Submer	sible Grundfos	Pump, IBP= I	n-place Bladde	r Pump	eflon	
1	TU	BING MATERIAL	CODES: PP=	- Polypropylen	e, P⊑= Polyet	пунепе, МР=	Non-inert Plas	IIC, IL- TEIION	Lileu, II-I	Chon	

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Contact Proper Proper Proper Contact Proper Prop	11	UBAYVI	EW BOULE			VATER S				o 1 3-03:	J-22 10	
SAMPLED SAMPLING SAMPLING SAMPLE SAMPL	Client Name:	F	lazen and Sawye						Contact:			
Net Number TA3-PZ-11-L3 Sample 10	Date Sampled	~	Y07.0			12000	115			S&GV	V Test Facility	SE #2
PURGING DATA		0,				10090			GPS LAT		•	
WELL CAPACITY COMMENTS LOCATION Linearal UNK To UNK Static Depth PURSE COMMENTS LOCATION Linearal UNK To UNK Static Depth PURSE Comment Location Purpe Location Loc	TTOIL TTOIL TO		7,672 1126			LIRGING			GPS LONG			
DIAMETER C. CAPACITY CIMEN To UNK To UNK To Volver T. BO PUMP PUMP CODE TOTAL	WELL		WELL				DAIA		Static Depth		PURGE	60 00
COTAL WELL CODE CONTINUE	DIAMETER	1.0	CAPACITY	0.04	Interval	UNK	То	UNK		7.80		
WELL VOLUME TOTAL DEPTH STATIO DEPTH X WELL CAPICITY = VOLUME	TOTAL WELL DEPTH (Feet)	14.75	ELEVATION		ELEV	ATION			DIAMETER		CAPACITY	
ONE MELL O. 2.7	Purge Tec	hnique: q Sul					EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
VOLUME		OLUME = (10	IAL DEPTH - ST		X WELL CAPI	ICTTY =	3 WFII		<u>. </u>	5 WELL		
PUMP PUMP		0,2	78	VOLUME			VOLUMES			VOLUMES		
VOLUME			EQUIPMENT VO		IP VOLUME +	· (TUBING CAI		BING LEGNIF	i) + FLOW CEL			
INTIAL TUBING LEGNT IN WELL (FEET)												
TIME VOLUME VOLUME PURGE (Gallons) TOTAL VOLUME PURGE (Gallons) TOTAL VOLUME PURGE (Gallons) TOTAL VOLUME PURGE (Gallons) TOTAL VOLUME PURGE (Gallons) TOTAL VOLUME PURGE (Gallons) TOTAL VOLUME PURGE (Gallons) TOTAL VOLUME PURGE (Gallons) TOTAL VOLUME PURGE (Gallons) TOTAL VOLUME PURGE (Gallons) TOTAL VOLUME PURGE (Gallons) TOTAL VOLUME PURGE (Gallons) TOTAL VOLUME PURGE (Gallons) TOTAL VOLUME PURGE (Gallons) TOTAL VOLUME PURGE (Gallons) TOTAL VOLUME (Gallons) TOTAL							TIME	1555		1604	TOTAL PURGED	0.90
TIME		\times	\times	\times	\times		I .				\geq	\geq
160 0.30	TIME	PURGED	VOLUME PURGED		Water	(SU)	(oC)	(uS/cm)	(mg/L)	(NTUs)		ODOR (Describe)
Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.08, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016 SAMPLING DATA	1558	0.30	0.30	0.10	8.04	4.3	27.5	350.6	1.42	15.8	CLEAR	NONE
Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.010; 5/8" = 0.016 SAMPLING DATA	1601	0.30	0.60			4.7	27.5	351.9	1.34	14.2		
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.006; 1/2" = 0.010; 5/8" = 0.016 SAMPLING DATA SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE (CIRCLE ONE) SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE (CIRCLE ONE) SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLE TUBING SIGNATURES: SAMPLE PUMP FLOW RATE (mL/min) SAMPLE PUMP FLOW RATE (mL/min) CLEANING STEPS FIELD Y CLEANING STEPS FIELD Y CLEANING STEPS FIELD Y COC COLLECTED BY REVERSE FLOW? PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon	_	0.30	0.90			4.7	27.4	353.z	1.30	13.7	1	1
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.006; 1/2" = 0.010; 5/8" = 0.016 SAMPLING DATA SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE (CIRCLE ONE) SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE (CIRCLE ONE) SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLE TUBING SIGNATURES: SAMPLE PUMP FLOW RATE (mL/min) SAMPLE PUMP FLOW RATE (mL/min) CLEANING STEPS FIELD Y CLEANING STEPS FIELD Y CLEANING STEPS FIELD Y COC COLLECTED BY REVERSE FLOW? PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon											:	
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.006; 1/2" = 0.010; 5/8" = 0.016 SAMPLING DATA SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE (CIRCLE ONE) SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE (CIRCLE ONE) SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLE TUBING SIGNATURES: SAMPLE PUMP FLOW RATE (mL/min) SAMPLE PUMP FLOW RATE (mL/min) CLEANING STEPS FIELD Y CLEANING STEPS FIELD Y CLEANING STEPS FIELD Y COC COLLECTED BY REVERSE FLOW? PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon												
SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE (CIRCLE ONE) PP PE NP (L) TT SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLING (CIRCLE ONE) SAMPLING STEPS FIELD (LEANED) FIELD (LIRC) FIELD (LI								, ,		 		0.016
SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE (CIRCLE ONE) PP PE NP (TL)TT SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLING (CIRCLE ONE) SAMPLING (CIRCLE ONE) SAMPLING ENDED FILTER SIZE DUPLICATE Y OVER COLLECTED BY REVERSE FLOW? PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon	TUBII	NG INSIDE DI	A. CAPACITY (G	al./Ft.): 1/6 =					4, 3/6 - 0.00	1, 1,2 - 0.	010, 3/0 -	0.010
TUBING MATERIAL CODE (CIRCLE ONE) PP PE NP (T) TT SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLING (CIRCLE ONE) SAMPLE PUMP FLOW (CIECNING) STEPS VOC COLLECTED BY (CIRCLE ONE) PRESERVATION (CHECKED IN FIELD? PRESERVATION (CHECKED IN FIELD? WEATHER (CONDITIONS) COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon	SAMPLED BY	(/ COMPANY		~ ^ ^	<u> </u>	AIMI LIII				1 -	11	
CIRCLE ONE) PP PE NP CLITT LEGNTH IN WELL (FEET) SAMPLING INITIATED (COS SAMPLING INITIATED FIELD FILTER SIZE (µm) PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon				<u> S A</u>	<u>(</u>						<u> </u>	
INITIATED (COD) ENDED (COO) CLEANED YOUNG COLLECTED BY VOC COLLECTED BY REVERSE FLOW? PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon			PP PE N	P (TL)TT								
PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon		1605	ENDED	1606			STEPS					
CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon	B	Y (6)	E .			Y (N)			Y N(NA)			Y N (N/A
COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon			₩ N/A									
PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon	B		Clear	,90	•							
TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon	СОМ	MENTS										
TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon			PUMP CO	DDES: PP=Pe	ristaltic Pump	, GP= Submer	sible Grundfos	Pump, IBP= I	n-place Bladde	r Pump		
			BING MATERIAL	CODES: PP=	Polypropylen	e, PE= Polyet	hylene, NP= I	Non-inert Plast	ic, TL= Teflon	Lined, TT= To	eflon	

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

			GR	OUNDV	VATER S	SAMPLI	NG LOG	;			
Client Name:	Н	lazen and Sawye		Location:				Contact: Phone:			
Date Sampled				SAL Project	12090)15		Project Name	S&GV	/ Test Facility	SF #2
,	08	2312		#	100 1	<u> </u>		GPS LAT		· root r domey	
Well Number		TA3-PZ-09-N3		Sample ID	10	<u>ر</u>		GPS LONG			
		···			URGING	DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	4.18	PURGE PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		ELEV (REFEREN	O WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (TAL DEPTH - ST				EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME		22Ce	1/4 WELL VOLUME	X VVELL CAP	IOIT -	3 WELL VOLUMES	0.6	80	5 WELL VOLUMES		
		EQUIPMENT VO	LUME = PUM	IP VOLUME +	· (TUBING CAF	PACITY X TUI	SING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL				NG LEGNTH . (FEET)		PURGE TIME START	1457	PURGE TIME END	1512	TOTAL PURGED	1.50
INST. ID	\times	> <	\times	\times	SAL-SAM-63-	SAL-SAM - 65- <u>01</u>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0	\times	\geq
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1500	0.30	0.30	0.10	5.90	6.5	29.0	622	0.90	MAY	BROW	NONE
1503	0.70	0.60	1		6.5	28.5		0.95	MAX	-	1
1506	0-70	0.90	$-\!$		4.5	27.9		0.79	67>		
1509	0.30	1.20			6.4	27.7	545	0.80	515	1	
1512	0.30	1.50	1		G. #	27.5	575	0.72		1	
TURI		Capacity (gallons/f					, 4"=0.65, 5/16" = 0.004			"5.88 010: 5/8" =	0.016
10011	10 11101012 211	5/11/10/11 (55			AMPLIN				·		
SAMPLED BY		9	SAC			SAMF	PLER(S) TURES:	-	SC	1	
TUBING MAT (CIRCL	ERIAL CODE E ONE)	PP PE NI	•	SAMPLI	E TUBING WELL (FEET)			SAMPLE PU RATE (I			
SAMPLING INITIATED	1513	SAMPLING ENDED	1514	FIELD CLEANED	Y 🕙	CLEANING STEPS	<u> </u>				
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)	LIOT BBES	DUPLICATE	Y 🕖		LECTED BY SE FLOW?	Y N MA		COLLECTED SH TRAP?	Y N (N/A
	IN FIELD?	Ø N N∕A		ERVATIVES DED						····	
•	THER ITIONS	Clear	,87°								

Reviewed By:

COMMENTS

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

			Gr	COMPA	VAIER	SAIVIPLI	NG LOC				
Client Name:	H	lazen and Sawye	r	Location:				Contact: Phone:			
Date Sampled				SAL Project	1209	7015		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA3-PZ-16-N3		Sample ID	,	1		GPS LAT			
			J	P	URGINO	DATA		GPS LONG			
					OITOIIT	DAIA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	4.34	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	17.30	REFERENCE ELEVATION (NGVD)		GROUND ELEV/				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	hnique: q Sul	omerged Screen (1,1/4,1/4 Well	•		I EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scre		minutes)
WELL V	OLUME = (TO	TAL DEPTH - ST	ATIC DEPTH)	x WELL CAPI	CITY =		· · · · · · · · · · · · · · · · · · ·				
ONE WELL VOLUME	0.5	78	1/4 WELL VOLUME			3 WELL VOLUMES	1.5	5	5 WELL VOLUMES		
		EQUIPMENT VO		P VOLUME +	(TUBING CA						
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL		·	FINAL TUBII IN WELL			PURGE TIME START	1517	PURGE TIME END	1532	TOTAL PURGED	3.00
INST. ID	\times	$>\!\!<$	\times	\times	SAL-SAM-63 <u>ご</u> /	SAL-SAM - 65- <u>O/</u>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0 <u>1</u>	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1520	0.60	0.60	0.20	6.54	6.0	26.9	324-4	0.41	MAX	BROW	NONG
1523	0.60	1.20			5.5	26.2	309.7	0.32	MAX		
1526	0.60	1.80			5.5	26.1	309.8	0.31	MAX		
1529	0.60	2.40			5.5	26.0	310.0	0.29	45>		
1532		3.00	1	·	5.5	<u> </u>	309.4	0.27	172	CLOUPY	
		apacity (gallons/f	_							"5.88	
TUBIN	IG INSIDE DIA	. CAPACITY (Ga	l./Ft.): 1/8" =			/4" = 0.0026;	5/16" = 0.004	1; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" =	0.016
				Si	AMPLIN	G DATA		T			
SAMPLED BY (PRI			<u>SA</u> (TURES:		X	1	
TUBING MAT (CIRCLI		PP PE NE	π		TUBING WELL (FEET)			SAMPLE PU RATE (r			
SAMPLING INITIATED	1533	SAMPLING ENDED	1534	FIELD CLEANED	Y(N)	CLEANING STEPS					
FIELD	Y (1)	FILTER SIZE	1725	DUPLICATE	Y (N)	VOC COLI	LECTED BY SE FLOW?	Y N M/A		COLLECTED	Y N (N/A
FILTERED? PRESER	VATION	(μm) (P)N N/A		I ERVATIVES DED		I VEAEVS	JL FLUVV!		U INKOU	JIT IIVAF (
CHECKED			<u> </u>		L						
CONDI		Clear	,70								
СОММ	IENTS										
		PUMP CO	DES: PP=Per	istaltic Pump,	GP= Submers	sible Grundfos	Pump, IBP= Ir	n-place Bladder	Pump		<u>-</u> -
	TUE	ING MATERIAL	CODES: PP=	Polypropylene	, PE= Polyeti	nylene, NP= N			ined, TT= Te	flon	
Re	eviewed By:						Date				*

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

11	UBAYVI	EW BOULE			NATER S				B13-85t	5-2218	
Client Name:		lazen and Sawye		Location:			NO LOC	Contact:			
				SAL Project	1209		2-00-00	Phone:			05.40
Date Sampled		282412	-	#	1904	2401	3030	Project Name GPS LAT	S&GV	V Test Facility	SE #2
Well Number		TA3-PZ-09-07		Sample ID	1	7		GPS LAT		·	
				Р	URGING	DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	4.48	PURGE PUMP CODE	€P GP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		ELEV/ (REFERENC	CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	-
		omerged Screen TAL DEPTH - ST			ged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL			1/4 WELL	X VVLLE OALL	0111 -	3 WELL	0 (26.24	5 WELL		
VOLUME	0.	214	VOLUME	D VOLUME :	TUDING CAT	VOLUMES	0.6		VOLUMES	···	
DUILED.		EQUIPMENT VO	·	IP VOLUME +	(TUBING CAP		BING LEGINTA) + FLOW CEL	EQUIPMEN		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			T VOLUME		
INITIAL TUBI				NG LEGNTH L (FEET)		PURGE TIME START	0720	PURGE TIME END	0735	TOTAL PURGED	1.50
INST. ID	\times	> <	\times	\times	SAL-SAM-63	SAL-SAM - 65- <u>ご</u> /	SAL-SAM-63 <u>O/</u>	SAL-SAM-55- <u>のこ</u>	SAL-SAM- 0_/	\geq	\geq
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0723	0.30	030	0.10	6.04	7.5	26.2	453.9	1.25	MAX	Drown	NONE
0726	0.30	0.60			7.0			1.10	MAX		1
0729	0.30	0.90			Ce. Ge	26.7	490	0.94	MAX		
0732	0.30	1.20			G.6	26.7	495	0.91	643	1	
0735		1.50	1	/	Co. Co	26.7	488	5"=1.02, 6		"5.88	
TUBII	Well C	Capacity (gallons/ A. CAPACITY (Ga	ioot): 0.75 =0 al./Ft.): 1/8" =	.02, 1.25"=0 0.0006; 3/16'			5/16" = 0.004				0.016
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					AMPLIN		4			,	
	// COMPANY INT)		SAL			SAMP	PLER(S) ATURES:		>		4
TUBING MAT	ERIAL CODE E ONE)		<u></u>	1	E TUBING WELL (FEET)			SAMPLE PI RATE (JMP FLOW mL/min)		
SAMPLING INITIATED	2756	SAMPLING ENDED	0737	FIELD CLEANED	Y (N)	CLEANING STEPS					
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (G)		LECTED BY SE FLOW?	Y N N/A		COLLECTED GH TRAP?	Y N 🐠
	IN FIELD?	(f) N N/A		DED DED							
	THER	Clea	·, 7	5°			<u> </u>				
COM	MENTS										
		PUMP CO	ODES: PP=Pe	Polygranida	, GP= Submer	sible Grundfos	Pump, IBP= I	n-place Bladde	rPump Lined TT=T	eflon	
	TUI eviewed By		CODES: PP	- Polypropylen	e, re-roiyet	nyiene, NE-	Date				

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

DIAMETER	11	O BAYVIE	EW BOULE							813-855	5-2218	
Date Sampood Date	Client Name:		lazen and Sawye				<u> </u>		Contact:			
Met Number	Date Sampled					1200	010			S&GV	V Test Facility	SF #2
PURGING DATA	•			<u>, r</u>	-						T TOOK T GOMEY	
WELL OLDMATER C. CAPACITY C. CAPAC	vveii Number		1A3-PZ-16-U/		· ·				GPS LONG			
DIAMETER				-		URGING	DATA		Otatia Danth		DUDGE I	
TOTAL WELLY TOTAL	DIAMETER	1.0	CAPACITY	0.04	Interval	UNK	То	UNK	to Water	4. 7 2	PUMP	
WELL VOLUME	DEPTH (Feet)	· •	ELEVATION (NGVD)		ELEV/ (REFERENC	ATION CE-STATIC)			DIAMETER (Inches)		CAPACITY (gal/ft)	
ONE WELL	Purge Tec	hnique: q Sub	omerged Screen	(1,1/4,1/4 Well ATIC DEPTH)) q Submer	rged Screen (1 CITY =	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
PUMP PUMP	ONE WELL			1/4 WELL	X			1.5	0			
VOLUME			EQUIPMENT VO	DLUME = PUM	P VOLUME +	(TUBING CA	PACITY X TUE	BING LEGNTH) + FLOW CEL	L VOLUME	1	
INTIAL IDBING LEGNTH INVELLIFEET INVEL												
TIME							TIME	0739		0754		3.00
TIME PURGE PURGE (Gallons) PURGE PURGE (Gallons) PURGE (Gallon		\times	\times	\times	\times						\times	\times
0745	TIME	PURGED	VOLUME PURGED		Water	(SU)	(oC)	(uS/cm)	(mg/L)	(NTUs)		ODOR (Describe
0748	0742	0.60	0.60	0.20	602	6.0	26.2	70Ce.Z	1-11	MAX	BEOWN	NONE
### COMMENTS State	0745	0.60	1.20			5.7	25.9	293.8	6.59	MAX		1
Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.85, 5"=1.02, 6"=1.47, 12"5.88 TUBING INSIDE DIA. CAPACITY (Gal./FL): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016 SAMPLED BY / COMPANY (PRINT)	0748	0.60	1.80			5.5	25.8	291.9	0.53	511	CLOUDY	
Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016 SAMPLED BY / COMPANY (PRINT)	0751	0.60	2.40			5.4	25.8	291.5	0.50	124		\perp
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016 SAMPLING DATA SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE (CIRCLE ONE) SAMPLING CIRCLE ONE) SAMPLING ENDED OTSO SAMPLING ENDED OTSO SAMPLING ENDED OTSO SAMPLING ENDED OTSO SAMPLING ENDED FILED FILED FILERED? FILERED? FILERED? FILED FILERED? FILED FILERED? FILED	0154			<u> </u>	1 05	<u> </u>					P''5 00	
SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE (PP PE NP TLT SAMPLE TUBING (CIRCLE ONE) SAMPLING O 755 SAMPLING ENDED O 756 CLEANED YN CLEANING STEPS FIELD FILTERED? PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump	TURI									· · · · · · · · · · · · · · · · · · ·		0.016
SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE (CIRCLE ONE) SAMPLING (CIRCLE ONE) SAMPLING (CIRCLE ONE) SAMPLING (CIRCLE ONE) SAMPLING (CIRCLE ONE) SAMPLING (CIRCLE ONE) SAMPLING (CIRCLE ONE) SAMPLING (CIRCLE ONE) SAMPLING (CIRCLE ONE) SAMPLING (CIRCLE ONE) SAMPLING (CIRCLE ONE) SAMPLING (CIRCLE ONE) SAMPLE TUBING (CIRCLE ONE) SAMPLE PUMP FLOW (RATE (mL/min)) V N CLEANING (STEPS) SEMI-VOLS COLLECTED BY (N N/A) SEMI-VOLS COLLECTED BY (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP? Y N (N/A) SEMI-VOLS COLLECTED Y (N N/A) THROUGH TRAP?	100	10 1110102 011						· · · · · · · · · · · · · · · · · · ·	•			
TUBING MATERIAL CODE (CIRCLE ONE) PP PE NP TLTT SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLING (CIRCLE ONE) SAMPLING STEPS FIELD Y FILTER SIZE (µm) PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS SIGNATURES: SAMPLE PUMP FLOW RATE (mL/min) SAMPLE PUMP FLOW RATE (mL/min) SAMPLE PUMP FLOW RATE (mL/min) VN CLEANING STEPS THROUGH TRAP? VOC COLLECTED BY REVERSE FLOW? Y N N/A SEMI-VOLS COLLECTED Y N N/A SEMI-VOLS COLLECTED Y N N/A SEMI-VOLS COLLECTED Y N N/A SEMI-VOLS COLLECTED Y N N/A DDED PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump	SAMPLED BY	//COMPANY				AIVII LIIV			_ <		/	
CIRCLE ONE) PP PE NP TL TT LEGNTH IN WELL (FEET) SAMPLING INITIATED O 755 SAMPLING ENDED O 756 FIELD FILTER SIZE (µm) PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump				56	AL						<i>I</i>	
INITIATED 750 ENDED 756 CLEANED YN STEPS FIELD YN FILTER SIZE (µm) DUPLICATE YN REVERSE FLOW? YN NIA THROUGH TRAP? YN REVERSE FLOW? PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump			PP PE N	P (TL)TT								
PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump	SAMPLING INITIATED	0155	ENDED	0756		YN	STEPS			Logiu voi c	201150750	
CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump		Y @			1	Y(N)			Y N NA			YNO
COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump			Y)N N/A			1						
PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump			Cle	ar, 7	50							
PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TURING MATERIAL CODES: PP= Polygropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon	СОМ	MENTS								·		
TURING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, IL= letion Lined, II= letion			PUMP CO	DDES: PP=Pe	eristaltic Pump	, GP= Submer	sible Grundfos	Pump, IBP= I	n-place Bladde	r Pump	oflon	
Reviewed By: Date:				CODES: PP=	Polypropylen	e, PE= Polyet	thylene, NP= I			Linea, II= I	enon	

Reviewed By:

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

				CONDI		OAIVII LI	NG LOC			-	
Client Name:	н	lazen and Sawye	r	Location:				Contact: Phone:			
Date Sampled		782317	2	SAL Project #	1300	1015		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA3-PZ-09-I7		Sample ID	M			GPS LAT GPS LONG			
				Р	URGING	DATA		O O LONG			
WELL		WELL		Screen	01.011.0			Static Depth		PURGE	
DIAMETER (inches)	1.0	CAPACITY (gal/ft)	0.04	Interval (Feet)	UNK	То	UNK	to Water (Feet)	4.34	PUMP CODE	GP IBP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUND ELEV/ (REFEREN				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tech	nnique: q Sub	omerged Screen (TAL DEPTH - ST	1,1/4,1/4 Well	q Submei	ged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3 I	minutes)
	DLUME = (10	IAL DEPTH - ST	1/4 WELL	X WELL CAPI	CITT =	3 WELL	T	<u> </u>	5 WELL		L
ONE WELL VOLUME	0.2	202	VOLUME			VOLUMES	0.0	eCe1	VOLUMES		
<u> </u>		EQUIPMENT VO	DLUME = PUN	IP VOLUME +	(TUBING CAI	PACITY X TUI	BING LEGNTH	l) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBIN IN WELL			FINAL TUBII IN WELL	NG LEGNTH . (FEET)		PURGE TIME START	0718	PURGE TIME END	0733	TOTAL PURGED	1.50
INST. ID	\times	$\geq <$	\times	\times	SAL-SAM-63	SAL-SAM - 65 <u>©/</u>	SAL-SAM-63	SAL-SAM-55- QZ	SAL-SAM- 0	\geq	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (∆ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0721	6.30	0.30	6.10	1,08	7.8	26.0	1400	2.42	MAX	BROWN	NONE
0124	0.30	0,60		1	7.5	26.3	1452	7.68	MAX	4	
0727	6.30	0.90			7.3	26.4	1306	3.14	MAX		
0730	6-30	1.70				26.6	1032	347	83.0		
0733	0.30	1.50	-		7.0	26.6	882	3.3/	MAXE	1	<i>l</i>
		apacity (gallons/f					<u> </u>			"5.88	
TUBIN	IG INSIDE DIA	. CAPACITY (Ga	l./Ft.): 1/8" =				5/16" = 0.00	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" =	0.016
				S	AMPLIN						
SAMPLED BY (PRI			3AL				LER(S) TURES:		/		
TUBING MATI (CIRCLE		PP PE NI	· (С)П		E TUBING WELL (FEET)			SAMPLE PU RATE (I			
SAMPLING	A-1701	SAMPLING	4377	FIELD	Y (N)	CLEANING	T .	<u> </u>			
INITIATED	0134	ENDED FILTER SIZE	0735	CLEANED		STEPS VOC COL	LECTED BY		I SEMI-VOLS	COLLECTED	
FIELD FILTERED?	YW	FILTER SIZE (μm)		DUPLICATE	YW		SE FLOW?	Y N (N/A)		GH TRAP?	Y N (V/A)
PRESER CHECKED		Ø N N/A		ERVATIVES DED							
WEAT CONDI		Clea	r, 7	50							
COMM	IENTS										
		PUMP CC	DES: PP=Pe	ristaltic Pump,	GP= Submers	sible Grundfos	Pump, IBP= I	n-place Bladder	Pump		
	TUE	ING MATERIAL	CODES: PP=	Polypropylene	e, PE= Polyet	hylene, NP= I	Non-inert Plast	ic, TL= Teflon	Lined, TT= Te	eflon	
Re	eviewed By:						Date	:			
								-			

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

			GR	OUNDV	VATER	SAMPLI	NG LOG	3			
Client Name:	H	lazen and Sawye	r	Location:				Contact: Phone:			
Date Sampled		382312		SAL Project #	1209	015		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA3-PZ-16-I7		Sample ID	1	5		GPS LAT GPS LONG			
				Р	URGING	DATA					
WELL		WELL		Screen		****		Static Depth		PURGE	(PP) GP
DIAMETER (Inches)	1.0	CAPACITY (gal/ft)	0.04	Interval (Feet)	UNK	То	UNK	to Water (Feet)	4,40	PUMP CODE	IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUNE ELEV/ (REFERENC				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL		TAL DEPTH - ST	1/4 WELL	X VVELL CAPI	CIIT =	3 WELL			5 WELL	1	
VOLUME	0.5	EQUIPMENT VO	VOLUME	IP VOLUME +	(TURING CAL	VOLUMES	J.5		VOLUMES		
		EQUI MENT VO		II VOLONIE I	(TOBINO ON			, , , , , , , , , , , , , , , , , , , ,			
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL			FINAL TUBII IN WELL	NG LEGNTH . (FEET)		PURGE TIME START	0737	PURGE TIME END	0752	TOTAL PURGED	3.00
INST. ID	\times	><	\times	\times	SAL-SAM-63-	SAL-SAM - 65- <u>0/</u>	SAL-SAM-63 <u>0</u> /	SAL-SAM-55-	SAL-SAM- 0_/	\times	\geq
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0740	0.60	0.60	0.20	6,02	6.5	26.7	335.6	1.74	MAY	BROWN	HONE
0743	0.60	1.20	1	1	Ce. 2	25.9	316.3	0.78	511	/	
074Ce	0.60	1.80			6.1	25.7	305.1	0.73	316	CLOUDY	
0749	0,40	2.40			6.0	25.7	297.2	0.46	99.8		
0752	0.60	3.00			5.9		10		51.6		l
		apacity (gallons/f								"5.88 010: 5/8" = 0	2.046
TUBII	IG INSIDE DIA	A. CAPACITY (Ga	il./Ft.): 1/8" =				5/16" = 0.004	4; 3/8" = 0.00	6; 1/2" = U.	010; 5/8 = 0	J.016
		т		3/	AMPLIN	,		T		,	
SAMPLED BY	// COMPANY NT)		SAC	_			PLER(S) ATURES:		S	, :-bj	/
B .	ERIAL CODE E ONE)	PP PE NI	P (TL)TT		E TUBING WELL (FEET)			SAMPLE PI RATE (I	JMP FLOW mL/min)		
SAMPLING INITIATED	0753	SAMPLING ENDED	0754	FIELD CLEANED	Y W	CLEANING STEPS				· · · · · · · · · · · · · · · · · · ·	
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)		DUPLICATE	Y (N)		LECTED BY SE FLOW?	Y N NA		COLLECTED GH TRAP?	Y N (V
PRESE	VATION IN FIELD?	Øn N∕A		ERVATIVES DED							
	THER ITIONS	Clear	,75								
СОМ	MENTS										
		PUMP CC	DES: PP=Pe	ristaltic Pump	GP= Submer	sible Grundfos	Pump, IBP= I	n-place Bladder	Pump		
	TUE	BING MATERIAL	CODES: PP=	Polypropylen	e, PE= Polyet	hylene, NP≕ l	Non-inert Plast	ic, IL= Teflon	Linea, TT= To	etion	

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

				GR	ROUNE	WATER	SAMPLI	NG LO	}				
Client Name:	ŀ	lazen and Sawye	r		Location:				Contact: Phone:				
Date Sampled	082312				SAL Proje	120	9015		Project Name	S&GV	V Test Facility	SE #2	
Well Number	TA3-PZ-09-M9				Sample ID (C				GPS LAT GPS LONG				
						PURGING	3 DATA						
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.0	54	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	4.50	PURGE PUMP CODE	PP G IBP	
TOTAL WELL DEPTH (Feet)	9.85 REFERENCE ELEVATION (NGVD)			ELE	ND WATER EVATION ENCE-STATIC)			TUBING DIAMETER (inches)		TUBING CAPACITY (gal/ft)			
Purge Tec	hnique: q Sul	bmerged Screen ((1,1/4,1/4	4 Well) q Subn	nerged Screen (1	IEQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)	
WELL VOLUME = (TOTAL DEPTH - STA			1/4 W VOLU	ELL	X WELL CA	CICITY -	3 WELL VOLUMES					<u>.</u>	
		EQUIPMENT VO	DLUME :	= PUN	P VOLUME	+ (TUBING CA	PACITY X TUI	BING LEGNTH	l) + FLOW CEL	L VOLUME			
PUMP VOLUME			TUBI LEGN				FLOW CELL VOLUME			EQUIPMEN T VOLUME			
INITIAL TUBING LEGNTH IN WELL (FEET)			FINAL TUBING LEGNT		н	PURGE TIME START	1612	PURGE TIME END	1627	TOTAL PURGED	1.50		
INST. ID	\times	\times	\geq	<	\times	SAL-SAM-63	SAL-SAM - 65-01	SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	\times	
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PUR RATE (Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describ	
1615	0.30	0.30	0.	10	6.09	6.0	27.8	467.5	1.15	MAX	DROWN	Non	
1618	0.30	0.60		'		6.2	27.6	485	1.08	MAX			
1621	0.30	0.90				6.2	27.5	490	1.08	MAX			
	_		1)		1 <i>1</i>	1 ->			Ι.		1 1	I 1	

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; **SAMPLING DATA**

1,50 Well Capacity (gallons/foot): 0.75"=0.02,

3"=0.37,

4"=0.65,

5"=1.02,

6"=1.47,

12"5.88

5/8" = 0.016

1/2" = 0.010;

1.25"=0.06,

	SAL	SAMPLER(S) SIGNATURES:		Styl							
PP PE NF	°	SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)					
SAMPLING ENDED	1629	FIELD CLEANED	Y (N)	CLEANING STEPS							
FILTER SIZE (μm)		DUPLICATE	Y (N)			ΥN				ΥI	N (N/A
Y N N/A	N N/A LIST PRESERVATIVES ADDED										
clea	^, 88	3'									
PUMP CO	DES: PP=Pe	ristaltic Pump, (GP= Submers	ible Grundfos I	Pump, IBP= Ir	n-place B	ladder I	Pump			
BING MATERIAL (CODES: PP=	Polypropylene,	PE= Polyeth	ylene, NP= N	on-inert Plasti	c, TL=T	eflon Li	ned, TT= Te	flon		
r:				Date:				·			
	SAMPLING ENDED FILTER SIZE (µm) N N/A C/ea	PUMP CODES: PP=Pe BING MATERIAL CODES: PP=	SAMPLING LEGNTH IN V SAMPLING POLEANED FILTER SIZE DUPLICATE (μm) V N N/A LIST PRESERVATIVES ADDED PUMP CODES: PP=Peristaltic Pump, 0 BING MATERIAL CODES: PP= Polypropylene	SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLING PORT FIELD CLEANED Y N FILTER SIZE DUPLICATE Y N W N N/A LIST PRESERVATIVES ADDED PUMP CODES: PP=Peristaltic Pump, GP= Submers BING MATERIAL CODES: PP= Polypropylene, PE= Polyetr	SIGNAT SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLING ENDED SAMPLING ENDED FILTER SIZE DUPLICATE Y N VOC COLL REVERSI Y N N/A LIST PRESERVATIVES ADDED CLean, PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos I BING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= N	SIGNATURES: SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLING ENDED SAMPLING ENDED FILTER SIZE (µm) DUPLICATE Y N CLEANING STEPS VOC COLLECTED BY REVERSE FLOW? PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP=Ir BING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plasti	SIGNATURES: PP PE NP TOTT SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLING ENDED / C 2 9 FIELD CLEANED Y N CLEANING STEPS FILTER SIZE DUPLICATE Y N VOC COLLECTED BY REVERSE FLOW? Y N N/A LIST PRESERVATIVES ADDED PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place B BING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= T	SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLE PU RATE (M SAMPLING ENDED SAMPLING ENDED FILTER SIZE (µm) DUPLICATE Y N CLEANING STEPS FILTER SIZE (µm) V N LIST PRESERVATIVES ADDED PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder BING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Li	SAMPLE PUMP FLOW RATE (mL/min) SAMPLING LEGNTH IN WELL (FEET) SAMPLING LEGNTH IN WELL (FEET) SAMPLE PUMP FLOW RATE (mL/min) SAMPLING STEPS FILTER SIZE DUPLICATE Y N VOC COLLECTED BY REVERSE FLOW? N N/A LIST PRESERVATIVES ADDED PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump BING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Te	SIGNATURES: PP PE NP TOTT SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLE PUMP FLOW RATE (mL/min) SAMPLING ENDED / C 2 9 FIELD Y N STEPS FILTER SIZE DUPLICATE Y N VOC COLLECTED BY REVERSE FLOW? Y N N/A LIST PRESERVATIVES ADDED PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump BING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon	SIGNATURES: SIGNATURES: SAMPLE PUMP FLOW RATE (mL/min) SAMPLING LEGNTH IN WELL (FEET) SAMPLING SAMPLE PUMP FLOW RATE (mL/min) SAMPLING SAMPLE PUMP FLOW RATE (mL/min) SAMPLE PUMP FLOW RATE (mL/min) SAMPLE PUMP FLOW RATE (mL/min) SAMPLE PUMP FLOW RATE (mL/min) SAMPLE PUMP FLOW RATE (mL/min) SAMPLE PUMP FLOW RATE (mL/min) SEMI-VOLS COLLECTED BY THROUGH TRAP? Y N N/A LIST PRESERVATIVES ADDED Clean, SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

All Samples All Project			=W BOULE			VATER S						
Metalogue	Client Name:	н	lazen and Sawye	r	Location:							
WELL WELL O. CAPACITY O. O. 4 Interval Interval Interval O. O. 4 Interval	Date Sampled		08730	^2_		1209	012			S&GV	V Test Facility	SE #2
PURGING DATA	Well Number						17					
WELL WELL					Р	URGING	DATA		GPS LONG			
Condition Color					Screen			UNK		11215		
OTAL MELL 7.98		1,0	(gal/ft)	0.04	(Feet)				(Feet)	7:70	CODE	18P
WELL VOLUME	TOTAL WELL DEPTH (Feet)	17.28	ELEVATION		ELEV/ (REFEREN	ATION CE-STATIC)			DIAMETER (Inches)		CAPACITY (gal/ft)	i
ONE WELL ONE							EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
PUMP PUMP TUBING EGNTH FLOW CELL FOUNDER FLOW CELL FLOW TO LUMB PURGED	ONE WELL	55	550.50	1/4 WELL VOLUME			VOLUMES	1.5	36	VOLUMES		
NOTINE LEGNTH PINAL TUBING LEGNTH PURGE TYOLUME TYOLUME TYOLUME TYOLUME TYOLUME TYOLUME TYOLUME PURGE TIME TYOLUME TYOLUME PURGE TIME TYOLUME TYOLUME PURGE TYOLUME PURGE TYOLUME PURGE TYOLUME PURGE TYOLUME PURGE			EQUIPMENT VO		IP VOLUME +	(TUBING CAI		BING LEGNTH	l) + FLOW CEL			
INTIAL USING LEGNT INVELL (FEET) TIME START G 3 FINAL USING LEGNT INVELL (FEET) TIME START G 3 FINAL USING LEGNT INVELL (FEET) TIME START G 3 FINAL USING LEGNT INVELL (FEET) TIME START G 3 FINAL USING LEGNT INVELL (FEET) TIME START G 3 FINAL USING LEGNT INVELL (FEET) TIME START G 3 FINAL USING LEGNT INVELL (FEET) TIME START G 3 FINAL USING LEGNT INVELL (FEET) TIME START G 3 FINAL USING LEGNT INVELL (FEET) TIME START G 3 FINAL USING LEGNT INVELL (FEET) TIME START G 3 FINAL USING LEGNT INVELL (FEET) TIME START G 3 FINAL USING LEGNT INVELL (FEET) TIME START G 3 FINAL USING LEGNT INVELL (FEET) INVEL (FEET) INV							_					
TIME VOLUME PURGED VOLUME PURGE (Gallons) TOTAL VOLUME PURGED (Gallons) PURGED (Gallons) PURGED (Gallons) PURGED (Gallons) PURGED (Gallons) PURGED (Gallons) PURGED (Gallons) PURGED (Gallons) PURGED (Gallons) PURGED (Gallons) PURGED (Gallons) PURGED (Gallons) PURGED (Gallons) PURGED (Gallons) PURGED (Gallons) (A < 0.2) PURGED (Gallons) PUR							TIME	1631		164Ce	TOTAL PURGED	3.00
TIME PURGED (Galions) VOLUME PURGED (Feet) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A < 0.2) (A		\times	> <	\times	\times			SAL-SAM-63	SAL-SAM-55-		\geq	\geq
16 1 20 1 20 1 20 1 20 1 20 1 20 28 7 4 28 7 4 28 7 4 28 7 4 28 28 7 4 28 28 7 4 28 28 7 4 28 28 7 4 28 28 7 4 28 28 7 4 28 28 28 7 4 28 28 28 7 4 28 28 28 28 3 4 28 28 28 28 3 28 28 28	TIME	PURGED	VOLUME PURGED		Water	(SU)	(oC)	(uS/cm)	(mg/L)	(NTUs)	I	ODOR (Describe)
C + C C + C C + C C + C C + C C + C C	31634	0.60	0.60	0.20	6.20	5.7	26.6	289.1	0.40	891	BROWN	NONE
C C C C C C C C C C	1637	0.60	1.20			5.6	266	788.5				
Vell Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88 TUBING INSIDE DIA. CAPACITY (Gal./FL): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.016; 5/8" = 0.016 SAMPLING DATA	1640	0.60	1.80			5.5	26.4	287.4	3.32	213		
Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.85, 5"=1.02, 6"=1.47, 12"5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016 SAMPLING DATA	1643	0.60	7.40			5.4	76.4	286.9	0.30	103	CCOUPY	
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016 SAMPLING DATA SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE (CIRCLE ONE) SAMPLER TUBING MATERIAL CODE (CIRCLE ONE) SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE (CIRCLE ONE) SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLE TUBING SAMPLE PUMP FLOW RATE (mL/min) SAMPLING SAMPLING SAMPLING STEPS FIELD FIELD FILTER SIZE (LEANED) PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PLIMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump	1646					5.4						
SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE (CIRCLE ONE) SAMPLING MATERIAL CODE (CIRCLE ONE) SAMPLING LEGNTH IN WELL (FEET) SAMPLING SAMPLING LEGNTH IN WELL (FEET) FIELD FILTER SIZE (LEANED Y STEPS) FILTE	TUBII											0.016
TUBING MATERIAL CODE (CIRCLE ONE) SAMPLE TUBING (CIRCLE ONE) SAMPLE TUBING (CIRCLE ONE) SAMPLING (CIRCLE ONE) SAMPLE TUBING (CIRCLE ONE) SAMPLE PUMP FLOW (RATE (mL/min)) SAMPL								4			•	
TUBING MATERIAL CODE (CIRCLE ONE) PP PE NP TL TT SAMPLE TUBING LEGNTH IN WELL (FEET) SAMPLING SAMPLING SAMPLING STEPS FIELD STEPS FILTERED? PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump				SAL	 				\ \S	/	M	
INITIATED FILD FILTER SIZE (μm) PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS CLEANED VOC COLLECTED BY REVERSE FLOW? VOC COLLECTED BY REVERSE FLOW? VOC COLLECTED BY REVERSE FLOW? VOC COLLECTED BY REVERSE FLOW? VOC COLLECTED BY Y N N/A SEMI-VOLS COLLECTED Y N N/A REVERSE FLOW? FILTER SIZE (μm) VOC COLLECTED BY REVERSE FLOW? VOC COLLECTED BY REVERSE FL	TUBING MAT	ERIAL CODE	PP PE N	Р (ПОП								
FILTERED? PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS FILTER SIZE (µm) DUPLICATE Y VOC COLLECTED BY REVERSE FLOW? Y N SEMI-VOLS COLLECTED Y N N N N SEMI-VOLS COLLECTED Y N N N N N N PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump		1647		1648		Y						
PRESERVATION CHECKED IN FIELD? WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump	FIELD				DUPLICATE	Y (N)			Y N (NA)			Y N N/A
COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump	PRESE	RVATION										
PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump			Clea	r, 8°	80			•				
PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump	СОМ	MENTS		-								
			PUMP CO	DDES: PP=Pe	eristaltic Pump	, GP= Submer	sible Grundfos	Pump, IBP=	In-place Bladde	r Pump	effon	

Reviewed By:

Date:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

				00.151	******	SAIVIPLI					
Client Name:	н	lazen and Sawye	r	Location:				Contact: Phone:			
Date Sampled		08241	2	SAL Project	1209	012		Project Name	S&GV	V Test Facility	SE #2
Well Number	•	TA3-PZ-09-ST14	,	Sample ID		8		GPS LAT			
				P	URGING			GPS LONG			
					ONGINE	עליל					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	4.38	PURGE PUMP CODE	PP) GP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUNE ELEV/ (REFEREN	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen				EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
WELL V	OLUME = (TO	TAL DEPTH - ST	ATIC DEPTH)	x WELL CAPI	CITY =						
ONE WELL VOLUME	0-1	218	1/4 WELL VOLUME			3 WELL VOLUMES	0.6	-	5 WELL VOLUMES		
		EQUIPMENT V	DLUME = PUN	IP VOLUME +	(TUBING CAI	PACITY X TUE	SING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	0803	PURGE TIME END	0818	TOTAL PURGED	1.50
INST. ID	\times	\times	\times	\times	SAL-SAM-63-	SAL-SAM - 65 O/	SAL-SAM-63 <u>O/</u>	SAL-SAM-55- 02	SAL-SAM- 0 <u>/</u>	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (∆ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0806	0.30	0.30	0.10	Ce.20	4.Ce	26.2	233.4	0.80	MAX	BROWN	NONE
0809	0.30	0.60			4.5	26.8		0.53	MAX		1
0812	0.30	0.90			4. Ce	26.9		0.52		1	
0815	0.30	1.20			4.6	26.9	1	0.48	10,,	CLOUPY	
0818	0.30	1.50		•	4.6	76.9		0.48	114		\
	Well 0	Capacity (gallons/	foot): 0.75"=0	.02, 1.25"=	0.06, 2"=0.1	16, 3"=0.37	4"=0.65,	5"=1.02, 6	"=1.47, 12	"5.88	
TURIN		A. CAPACITY (Ga			" = 0.0014; 1	/4" = 0.0026;	5/16" = 0.00	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" =	0.016
					AMPLIN		Ĭ.	····			
SAMPLED BY			SAC			SAMP	LER(S) TURES:		4	21	
TUBING MAT (CIRCL	ERIAL CODE E ONE)	PP PE N	P TL)TT		E TUBING WELL (FEET)			SAMPLE PI RATE (I	JMP FLOW mL/min)		
SAMPLING	4000	SAMPLING	~C/2^	FIELD	YN	CLEANING		·			
INITIATED FIELD	0819	ENDED FILTER SIZE	0820	CLEANED		VOC COL	LECTED BY	Y N (N/A		COLLECTED	Y N (N/A)
FILTERED?	Y(N)	(μm)	LIET DDEC	DUPLICATE	Y (N')	REVERS	SE FLOW?	I N (N/A	THROU	GH TRAP?	' ' (N/A)
	IN FIELD?	N N/A	AD	DED							
1	THER ITIONS	Cle	ar,	76°							
COMM	MENTS										
		PUMP Co	DDES: PP=Pe	eristaltic Pump	, GP= Submer	sible Grundfos	Pump, IBP= I	n-place Bladde	r Pump		
	TU	BING MATERIAL	CODES: PP=	Polypropylen	e, PE= Polyet	hylene, NP= I	Non-inert Plast	ic, TL= Teflon	Lined, TT≖ T	eflon	
R	eviewed By						Date				
-								-			

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

			GF	ROUNDV	VATER:	SAMPLI	NG LO	}			
Client Name:	F	lazen and Sawye	Г	Location:				Contact: Phone:			
Date Sampled	0	82412	·····	SAL Project	12090)12		Project Name	S&GV	V Test Facility	SE #2
Well Number	•	TA3-PZ-16-ST14		Sample ID		9		GPS LAT GPS LONG			
				Р	URGING	DATA		GIGLONG			1.0
WELL		WELL		Screen				Static Depth		PURGE	GP GP
DIAMETER (Inches)	1.0	CAPACITY (gal/ft)	0.04	Interval (Feet)	UNK	То	UNK	to Water (Feet)	4.32	PUMP CODE	IBP
TOTAL WELL DEPTH (Feet)	17.15	REFERENCE ELEVATION (NGVD)		1	WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (TAL DEPTH - ST			rged Screen (1	EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL	· · · · · · · · · · · · · · · · · · ·	_	1/4 WELL	X WELL CAPI	CITY =	3 WELL	15		5 WELL		
VOLUME	0.5	EQUIPMENT VO	VOLUME	IP VOLUME +	(TUBING CAI	VOLUMES PACITY X TUI	J, 5		VOLUMES L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME		<i>.</i>	EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	0821	PURGE TIME END	1580	TOTAL PURGED	1.80
INST. ID	><	$>\!\!<$	\times	><	SAL-SAM-63-	SAL-SAM - 65- <u>0</u> /	SAL-SAM-63	SAL-SAM-55- <u> の</u> ヱ	SAL-SAM-	><	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0825	0.60	0.60	0.20	6.24	5.1	76.0	270.9	0.49	123	CLOUDY	NONE
0828	0.60	1.20			5.1	25.9	272-1	0.42	123		1
0831	0.60	1.80	1	[5.1	25.9	272.7	0.38	121		L
	Mail C	apacity (gallons/f		00 4.05%] 0.06, 2"=0.1	6, 3"=0.37	. 4"=0.65,	5"=1.02, 6	 "=1.47. 12	"5.88	
TUBIN		A. CAPACITY (Gallons/I		•	•	·	, 4 =0.65, 5/16" = 0.004				0.016
					AMPLIN		1				
SAMPLED BY (PRI			SAL				PLER(S) TURES:		~	-0	
TUBING MATE (CIRCLE		PP PE N	r (T)		E TUBING WELL (FEET)	į		SAMPLE PU RATE (r			
SAMPLING INITIATED	0832	SAMPLING ENDED	0873	FIELD CLEANED	(N)	CLEANING STEPS					
FIELD FILTERED?		FILTER SIZE (μm)		DUPLICATE	Y (N)		LECTED BY SE FLOW?	Y N N/A		COLLECTED SH TRAP?	Y N N/A
PRESER CHECKED		Y) N N/A	AD	ERVATIVES DED							
WEAT CONDI		Cle	er, T	77°							
СОММ	IENTS										
								n-place Bladder			
D.	TUB eviewed By:	ING MATERIAL	CODES: PP=	Polypropylene	e, PE= Polyeth	nylene, NP= N	Non-inert Plasti Date		.ined, T₹= Te	erion	
L RE	viewed by:	I					1 Date	· L			

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

7.7	UBAYVI	EW BOULE			VATER S				813-800	D-2210	
Client Name:	H	lazen and Sawye	,	Location:				Contact:			
D-4- 0ld	6	`- '		SAL Project	1260	<u> </u>		Phone:	Secu	V Toet Eccility	SE #2
Date Sampled	02	82412		#	12091	uis		Project Name GPS LAT	3&GV	V Test Facility	SE #2
Well Number	•	TA3-PZ-09-ST16		Sample ID	Э	<u>.O</u>		GPS LONG			
				Р	URGING	DATA					
WELL DIAMETER (inches)	1,0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	4.10	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUND ELEV/ (REFEREN				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL	OLUME = (TO	TAL DEPTH - ST	1/4 WELL	X WELL CAPI	CITY =	3 WELL			5 WELL		
VOLUME	0.		VOLUME			VOLUMES	0.0		VOLUMES		
		EQUIPMENT VO	LUME = PUN	IP VOLUME +	(TUBING CAF	PACITY X TUE	SING LEGNTH	I) + FLOW CEL			
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL				NG LEGNTH _ (FEET)		PURGE TIME START	0856	PURGE TIME END	0851	TOTAL PURGED	150
INST. ID	\times	> <	\times	\times	SAL-SAM-63-	SAL-SAM - 65-01	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0 <u>O</u> /	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0839	0.30	0.30	0.10	6.00	5. G	27.0	335.8	1.55	808	BROWN	NONE
0842		0.60			5.6		7324	1.50	695	1	
0845	0.30	0.90			5.6	27.0	330.4	1.51	520		
0848	0.30	120			5.6	27.1	320.7	1.51	408	-	
0851	0.30	1.50	, , , , , ,	22 1 25"	5.7	27.1	312.8	5"=1.02. 6	194 "=1.47. 12	5.88	(
TUBII		apacity (gallons/f				•	4"=0.65, 5/16" = 0.004				0.016
					AMPLIN		\	·			
	(/ COMPANY INT)		42	L		SAMP	LER(S) TURES:		1	41	
	ERIAL CODE E ONE)	PP PE NI	رال)،		TUBING WELL (FEET)			SAMPLE PU RATE (r			
SAMPLING INITIATED	0852	SAMPLING ENDED	0853	FIELD CLEANED	4 (M)	CLEANING STEPS			locus (o) o	COLLECTES	
FIELD FILTERED?	YCD	FILTER SIZE (μm)	11ST DDES	DUPLICATE	YN		LECTED BY SE FLOW?	Y N N/A		COLLECTED GH TRAP?	Y N N/A
1	IN FIELD?	Y N N/A		DED				-,			
	THER ITIONS	Clea	r, 7	7"							
СОМ	MENTS										

Reviewed By:

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump
TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Date:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

1.1	UBAYVI	EW BOULE					NG LOG		B1 3-80t	5-2218	
Client Name:	ŀ	lazen and Sawye		Location:				Contact:			
Date Sampled	(T)(291112	, .	SAL Project	1200	ASA	1309015	Phone: Project Name	S&GV	V Test Facility	SE #2
Well Number		72412 TA3-PZ-16-ST16		# Sample ID	100	7.1	190013	GPS LAT			
				·	URGING	DATA		GPS LONG			
WELL		WELL		Screen	01101110			Static Depth	·	PURGE	63.00
DIAMETER (Inches)	1.0	CAPACITY (gal/ft)	0.04	Interval (Feet)	UNK	То	UNK	to Water (Feet)	4.53	PUMP CODE	(BP) GP
TOTAL WELL DEPTH (Feet)	17.30	REFERENCE ELEVATION (NGVD)		GROUND ELEV/ (REFERENC	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen TAL DEPTH - ST				EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL	· · · · · · · · · · · · · · · · · · ·		1/4 WELL	X 77222 0, 11 .	<u> </u>	3 WELL	1		5 WELL	,	
VOLUME	0.5	EQUIPMENT VO	VOLUME - BUIL	AD VOLUME +	(TUDING CA	VOLUMES	1.5		VOLUMES		
51445		EQUIPMENT V		IF VOLUME +	(TUBING CA		SING LEGINTH) + FLOW CEL			
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	0900	PURGE TIME END	0915	TOTAL PURGED	3,00
INST. ID	\times	><	\times	\times	SAL-SAM-63-	SAL-SAM - 65- <u>の</u> /	SAL-SAM-63	SAL-SAM-55- <u>0</u> 2	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0903	0.60	0.60	0120	6.12	5.4	26.2	263.1	0.66	725	BROWN	NONE
0906	0.60	6-1-20			5.3	26.0	26 3.2	0.47	518		1
0909	Q.60	1.80			5.2	26.0	262.4	0.39	54.8	CLOUDY	
0912	0.60	2.40			5.2		262.3	0,37	35.4		
0915	0.60	3,00	1	l	5.2	25.9	262.5	0.35	23.3	W. 00	}
TUBIN		Capacity (gallons/				<u> </u>	, 4"=0.65, 5/16" = 0.004			"5.88 010; 5/8" = (0.016
					AMPLIN	***		·		,	
SAMPLED BY (PRI			SAL.				PLER(S) TURES:		~ 4	-1	1
TUBING MAT (CIRCL	ERIAL CODE	PP PE N	P (TL) TT		TUBING WELL (FEET)			SAMPLE PU RATE (I			
SAMPLING INITIATED	0916	SAMPLING ENDED	0917	FIELD CLEANED	Y (N)	CLEANING STEPS					
FIELD FILTERED?	Y(R)	FILTER SIZE (μm)		DUPLICATE	YW	VOC COL	LECTED BY SE FLOW?	Y N NA		COLLECTED GH TRAP?	Y N WA
PRESER CHECKED		⟨Y) N N/A		ERVATIVES DED		1					
WEA ⁻ CONDI		Clear	-, 78	0							
COMN	IENTS										
		PUMP CO	DDES: PP=Pe	ristaltic Pump,	GP= Submers	sible Grundfos	Pump, IBP= I	n-place Bladde	Pump		
	TUE	BING MATERIAL	CODES: PP=	Polypropylen	e, PE= Polyet	hylene, NP= l	Non-inert Plast		Lined, TT= Te	etion	

Reviewed By:

Date:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA4-PZ-11-EF2						
Matrix		Groundwater						
SAL Sample Number		1209016-01						
Date/Time Collected		08/22/12 14:25						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								
pH	SU	4.2	DEP FT1100	0.1	0.1		08/22/12 14:25	SAS
Water Temperature	°C	27.8	DEP FT1400	0.1	0.1		08/22/12 14:25	SAS
Specific conductance	umhos/cm	187	DEP FT1200	0.1	0.1		08/22/12 14:25	SAS
Dissolved Oxygen	mg/L	1.5	DEP FT1500	0.1	0.1		08/22/12 14:25	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/26/12 11:12	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	11 l	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDE
Chloride	mg/L	6.8	EPA 300.0	0.20	0.050		08/27/12 16:47	JAG
Nitrate+Nitrite (N)	mg/L	5.5	EPA 353.2	0.40	0.10		08/26/12 11:23	MMF
Phosphorous - Total as P	mg/L	0.029	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:14	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 11:10	MMF
Sample Description		TA4-PZ-10-H5						
Matrix		Groundwater						
SAL Sample Number		1209016-02						
Date/Time Collected		08/22/12 10:56						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		08/22/12 10:56	SAS
Water Temperature	°C	27.2	DEP FT1400	0.1	0.1		08/22/12 10:56	SAS
Specific conductance	umhos/cm	235	DEP FT1200	0.1	0.1		08/22/12 10:56	SAS
Dissolved Oxygen	mg/L	1.4	DEP FT1500	0.1	0.1		08/22/12 10:56	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/26/12 11:14	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	11 I	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDE
Chloride	mg/L	9.7	EPA 300.0	0.20	0.050		08/27/12 16:47	JAG
Nitrate+Nitrite (N)	mg/L	7.9	EPA 353.2	0.40	0.10		08/26/12 11:25	MMF
Phosphorous - Total as P	mg/L	0.052	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:15	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	2.5	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 11:15	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA4-PZ-10-J5						
Matrix		Groundwater						
SAL Sample Number		1209016-03						
Date/Time Collected		08/22/12 10:44						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		08/22/12 10:44	SAS
Water Temperature	°C	27.2	DEP FT1400	0.1	0.1		08/22/12 10:44	SAS
Specific conductance	umhos/cm	382	DEP FT1200	0.1	0.1		08/22/12 10:44	SAS
Dissolved Oxygen	mg/L	2.1	DEP FT1500	0.1	0.1		08/22/12 10:44	SAS
Inorganics Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/26/12 11:20	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDB
Chloride	mg/L	23	EPA 300.0	0.20	0.050	00/20/ 12 11110	08/27/12 16:47	JAG
Nitrate+Nitrite (N)	mg/L	11	EPA 353.2	0.40	0.10		08/26/12 11:27	MMF
Phosphorous - Total as P	mg/L	0.058	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:17	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 11:17	MMF
Sample Description		TA4-PZ-10-K5						
Matrix		Groundwater						
SAL Sample Number		1209016-04						
Date/Time Collected		08/22/12 10:29						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								
pH	SU	4.2	DEP FT1100	0.1	0.1		08/22/12 10:29	SAS
Water Temperature	°C	27.1	DEP FT1400	0.1	0.1		08/22/12 10:29	SAS
Specific conductance	umhos/cm	389	DEP FT1200	0.1	0.1		08/22/12 10:29	SAS
Dissolved Oxygen	mg/L	1.7	DEP FT1500	0.1	0.1		08/22/12 10:29	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/26/12 11:22	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDB
Chloride	mg/L	36	EPA 300.0	0.20	0.050		08/27/12 16:47	JAG
Fluoride	mg/L	0.18	EPA 300.0	0.040	0.010		08/23/12 16:55	JAG
Nitrate (as N)	mg/L	15	EPA 300.0	0.04	0.01		08/23/12 16:55	JAG
Nitrate+Nitrite (N)	mg/L	16	EPA 353.2	0.40	0.10		08/26/12 11:29	MMF
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		08/23/12 16:55	JAG
Phosphorous - Total as P	mg/L	0.16	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:18	MMF
Sulfate	mg/L	56	EPA 300.0	0.60	0.20		08/23/12 16:55	JAG
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA4-PZ-10-K5						
Matrix		Groundwater						
SAL Sample Number		1209016-04						
Date/Time Collected		08/22/12 10:29						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 11:18	MMF
Total Organic Carbon	mg/L	1.8	SM 5310B	1.0	0.50		08/29/12 00:45	MEJ
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	1.2	SM 5310B	1.0	0.50		08/28/12 16:37	MEJ
<u>Metals</u>								
Boron	mg/L	0.079 I	EPA 200.7	0.10	0.050	08/24/12 08:44	08/24/12 16:46	VWC
Calcium	mg/L	31	EPA 200.7	0.50	0.042	08/24/12 08:44	08/24/12 16:46	VWC
Iron	mg/L	0.039 1	EPA 200.7	0.10	0.020	08/24/12 08:44	08/24/12 16:46	VWC
Magnesium	mg/L	7.5	EPA 200.7	0.50	0.020	08/24/12 08:44	08/24/12 16:46	VWC
Manganese	mg/L	0.033	EPA 200.7	0.010		08/24/12 08:44	08/24/12 16:46	VWC
Potassium	mg/L	5.1	EPA 200.7	0.050	0.010	08/24/12 08:44	08/24/12 16:46	VWC
Sodium	mg/L	22	EPA 200.7	0.50	0.13	08/24/12 08:44	08/24/12 16:46	VWC
Sample Description		TA4-PZ-11-L2						
Matrix		Groundwater						
SAL Sample Number		1209016-05						
Date/Time Collected		08/23/12 16:15						
Collected by		Sean Schmidt						
Date/Time Received		08/23/12 15:00						
Field Parameters								
рН	SU	4.7	DEP FT1100	0.1	0.1		08/23/12 16:15	SAS
Water Temperature	°C	29.1	DEP FT1400	0.1	0.1		08/23/12 16:15	SAS
Specific conductance	umhos/cm	282	DEP FT1200	0.1	0.1		08/23/12 16:15	SAS
Dissolved Oxygen	mg/L	2.3	DEP FT1500	0.1	0.1		08/23/12 16:15	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/26/12 11:24	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Chloride	mg/L	14	EPA 300.0	0.20	0.050		08/24/12 20:00	JAG
Fluoride	mg/L	0.14	EPA 300.0	0.040	0.010		08/24/12 20:00	JAG
Nitrate (as N)	mg/L	9.4	EPA 300.0	0.04	0.01		08/24/12 20:00	JAG
Nitrate+Nitrite (N)	mg/L	10	EPA 353.2	0.40	0.10		08/27/12 10:51	MMF
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		08/24/12 20:00	JAG
Phosphorous - Total as P	mg/L	0.040	SM 4500P-E	0.040	0.010	08/27/12 13:35	08/28/12 12:29	MMF
Sulfate	mg/L	60	EPA 300.0	0.60	0.20		08/24/12 20:00	JAG
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 11:52	MMF
Total Organic Carbon	mg/L	2.1	SM 5310B	1.0	0.50		08/29/12 00:45	MEJ

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Project Name		S&GW Test	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description	7	ΓΑ4-PZ-11-L2						
Matrix	(Groundwater						
SAL Sample Number	•	1209016-05						
Date/Time Collected	(08/23/12 16:15						
Collected by	•	Sean Schmidt						
Date/Time Received	•	08/23/12 15:00						
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	1.7	SM 5310B	1.0	0.50		08/28/12 16:37	MEJ
<u>Metals</u>								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	08/29/12 08:00	08/29/12 17:09	VWC
Calcium	mg/L	29	EPA 200.7	0.50	0.042	08/29/12 08:00	08/29/12 17:09	VWC
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	08/29/12 08:00	08/29/12 17:09	VWC
Magnesium	mg/L	5.6	EPA 200.7	0.50	0.020	08/29/12 08:00	08/29/12 17:09	VWC
Manganese	mg/L	0.083	EPA 200.7	0.010	0.0010	08/29/12 08:00	08/29/12 17:09	VWC
Potassium	mg/L	6.2	EPA 200.7	0.050	0.010	08/29/12 08:00	08/29/12 17:09	VWC
Sodium	mg/L	9.3	EPA 200.7	0.50	0.13	08/29/12 08:00	08/29/12 17:09	VWC
Sample Description	1	TA4-PZ-11-L3						
Matrix	(Groundwater						
SAL Sample Number	•	1209016-06						
Date/Time Collected	(08/22/12 09:32						
Collected by	9	Sean Schmidt						
Date/Time Received	•	08/22/12 15:00						
Field Parameters								
рН	SU	4.2	DEP FT1100	0.1	0.1		08/22/12 09:32	SAS
Water Temperature	°C	26.8	DEP FT1400	0.1	0.1		08/22/12 09:32	SAS
Specific conductance	umhos/cm	249	DEP FT1200	0.1	0.1		08/22/12 09:32	SAS
Dissolved Oxygen	mg/L	1.1	DEP FT1500	0.1	0.1		08/22/12 09:32	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/26/12 11:26	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	17 I	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDB
Chloride	mg/L	18	EPA 300.0	0.20	0.050		08/27/12 16:47	JAG
Nitrate+Nitrite (N)	mg/L	7.5	EPA 353.2	0.40	0.10		08/26/12 11:31	MMF
Phosphorous - Total as P	mg/L	0.032 I	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:19	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 11:20	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA4-PZ-11-L4						
Matrix		Groundwater						
SAL Sample Number		1209016-07						
Date/Time Collected		08/22/12 09:46						
Collected by Date/Time Received		Sean Schmidt						
Date/Time Neceived		08/22/12 15:00						
Field Parameters								
рН	SU	4.2	DEP FT1100	0.1	0.1		08/22/12 09:46	SAS
Water Temperature	°C	26.8	DEP FT1400	0.1	0.1		08/22/12 09:46	SAS
Specific conductance	umhos/cm	339	DEP FT1200	0.1	0.1		08/22/12 09:46	SAS
Dissolved Oxygen	mg/L	1.6	DEP FT1500	0.1	0.1		08/22/12 09:46	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/26/12 11:28	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDB
Chloride	mg/L	31	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Fluoride	mg/L	0.15	EPA 300.0	0.040	0.010		08/23/12 16:55	JAG
Nitrate (as N)	mg/L	12	EPA 300.0	0.04	0.01		08/23/12 16:55	JAG
Nitrate+Nitrite (N)	mg/L	13	EPA 353.2	0.40	0.10		08/26/12 11:34	MMF
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		08/23/12 16:55	JAG
Phosphorous - Total as P	mg/L	0.024	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:19	MMF
Sulfate	mg/L	52	EPA 300.0	0.60	0.20		08/23/12 16:55	JAG
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 11:21	MMF
Total Organic Carbon	mg/L	0.95 I	SM 5310B	1.0	0.50		08/29/12 00:45	MEJ
Inorganic, Dissolved	_							
Dissolved Organic Carbon	mg/L	0.85 I	SM 5310B	1.0	0.50		08/28/12 16:37	MEJ
<u>Metals</u>								
Boron	mg/L	0.077 I	EPA 200.7	0.10	0.050	08/24/12 08:44	08/24/12 16:56	VWC
Calcium	mg/L	27	EPA 200.7	0.50	0.042	08/24/12 08:44	08/24/12 16:56	VWC
Iron	mg/L	0.021 I	EPA 200.7	0.10	0.020	08/24/12 08:44	08/24/12 16:56	VWC
Magnesium	mg/L	6.6	EPA 200.7	0.50	0.020	08/24/12 08:44	08/24/12 16:56	VWC
Manganese	mg/L	0.043	EPA 200.7	0.010		08/24/12 08:44	08/24/12 16:56	VWC
Potassium	mg/L	5.3	EPA 200.7	0.050	0.010		08/24/12 16:56	VWC
Sodium	mg/L	20	EPA 200.7	0.50	0.13	08/24/12 08:44	08/24/12 16:56	VWC
Sample Description		TA4-PZ-11-L5						
Matrix		Groundwater						
SAL Sample Number		1209016-08						
Date/Time Collected		08/22/12 10:04						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								
pH	SU	4.2	DEP FT1100	0.1	0.1		08/22/12 10:04	SAS
·								

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA4-PZ-11-L5						
Matrix		Groundwater						
SAL Sample Number		1209016-08						
Date/Time Collected		08/22/12 10:04						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		08/22/12 10:04	SAS
Specific conductance	umhos/cm	389	DEP FT1200	0.1	0.1		08/22/12 10:04	SAS
Dissolved Oxygen	mg/L	1.5	DEP FT1500	0.1	0.1		08/22/12 10:04	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/26/12 11:30	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	11 I	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDB
Chloride	mg/L	36	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	18	EPA 353.2	0.40	0.10		08/26/12 11:36	MMF
Phosphorous - Total as P	mg/L	0.075	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:20	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 11:22	MMF
Sample Description		TA4-PZ-11-L6						
Matrix		Groundwater						
SAL Sample Number	,	1209016-09						
Date/Time Collected	(08/22/12 10:16						
Collected by	;	Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								
pH	SU	4.3	DEP FT1100	0.1	0.1		08/22/12 10:16	SAS
Water Temperature	°C	27.1	DEP FT1400	0.1	0.1		08/22/12 10:16	SAS
Specific conductance	umhos/cm	368	DEP FT1200	0.1	0.1		08/22/12 10:16	SAS
Dissolved Oxygen	mg/L	1.7	DEP FT1500	0.1	0.1		08/22/12 10:16	SAS
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/26/12 11:31	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/23/12 11:10	08/24/12 13:15	CDB
Chloride	mg/L	35	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	15	EPA 353.2	0.40	0.10		08/26/12 11:38	MMF
Phosphorous - Total as P	mg/L	0.073	SM 4500P-E	0.040	0.010	08/23/12 11:14	08/24/12 11:21	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 11:23	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Parameters Sample Description	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description								<u> </u>
Cample Description		TA4-PZ-09-M4						
Matrix		Groundwater						
SAL Sample Number		1209016-10						
Date/Time Collected		08/22/12 08:53						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								
рН	SU	6.6	DEP FT1100	0.1	0.1		08/22/12 08:53	SAS
Water Temperature	°C	26.7	DEP FT1400	0.1	0.1		08/22/12 08:53	SAS
Specific conductance	umhos/cm	552	DEP FT1200	0.1	0.1		08/22/12 08:53	SAS
Dissolved Oxygen	mg/L	0.6	DEP FT1500	0.1	0.1		08/22/12 08:53	SAS
Inorganics Ammonia as N	mg/L	0.011 I	EPA 350.1	0.040	0.009		08/28/12 12:09	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.040	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	26	EPA 300.0	0.20	0.050	00/31/12 13.31	08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	0.40	0.10		08/26/12 11:40	MMF
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.40	0.10	08/23/12 11:25	08/27/12 11:25	MMF
Total Njeldani Nili Ogen	mg/L	1.5	2177001.2	0.20	0.03	00/23/12 11.23	00/21/12 11.25	IVIIVII
Sample Description		TA4-PZ-16-M4						
Matrix		Groundwater						
SAL Sample Number		1209016-11						
Date/Time Collected		08/22/12 09:12						
Collected by Date/Time Received		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1		08/22/12 09:12	SAS
Water Temperature	°C	25.8	DEP FT1400	0.1	0.1		08/22/12 09:12	SAS
Specific conductance	umhos/cm	232	DEP FT1200	0.1	0.1		08/22/12 09:12	SAS
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		08/22/12 09:12	SAS
Inorganics Appropriate Annual Control		0.000 11	EDA 250.1	0.040	0.000		00/00/40 40:44	N 4 N 4 E
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009	00/04/40 45:54	08/28/12 12:11	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1 EPA 300.0	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	9.9		0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	6.5	EPA 353.2 EPA 351.2	0.40	0.10	00/00/40 44.05	08/26/12 11:42	MMF
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 11:26	MMF
Sample Description		TA4-PZ-09-N7						
Matrix		Groundwater						
SAL Sample Number		1209016-12						
Date/Time Collected		08/22/12 12:35						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA4-PZ-09-N7						
Matrix		Groundwater						
SAL Sample Number		1209016-12						
Date/Time Collected		08/22/12 12:35						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
рН	SU	5.6	DEP FT1100	0.1	0.1		08/22/12 12:35	SAS
Water Temperature	°C	27.4	DEP FT1400	0.1	0.1		08/22/12 12:35	SAS
Specific conductance	umhos/cm	317	DEP FT1200	0.1	0.1		08/22/12 12:35	SAS
Dissolved Oxygen	mg/L	1.3	DEP FT1500	0.1	0.1		08/22/12 12:35	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.14	EPA 350.1	0.040	0.009		08/28/12 12:13	MMF
Ammonium as NH4	mg/L	0.18	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	16	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	8.3	EPA 353.2	0.40	0.10		08/26/12 11:49	MMF
Total Kjeldahl Nitrogen	mg/L	4.1	EPA 351.2	0.20	0.05	08/23/12 11:25	08/27/12 11:45	MMF
Sample Description		TA4-PZ-16-N7						
Matrix		Groundwater						
SAL Sample Number		1209016-13						
Date/Time Collected		08/22/12 12:54						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		08/22/12 12:54	SAS
Water Temperature	°C	26.2	DEP FT1400	0.1	0.1		08/22/12 12:54	SAS
Specific conductance	umhos/cm	252	DEP FT1200	0.1	0.1		08/22/12 12:54	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/22/12 12:54	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.017 I	EPA 350.1	0.040	0.009		08/28/12 12:16	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	12	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	8.4	EPA 353.2	0.40	0.10		08/26/12 11:51	MMF
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	08/23/12 11:26	08/27/12 12:25	MMF
Sample Description		TA4-PZ-09-I7						
Matrix		Groundwater						
SAL Sample Number		1209016-14						
Date/Time Collected		08/22/12 11:20						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1		08/22/12 11:20	SAS

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA4-PZ-09-I7						
Matrix		Groundwater						
SAL Sample Number		1209016-14						
Date/Time Collected		08/22/12 11:20						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Water Temperature	°C	27.7	DEP FT1400	0.1	0.1		08/22/12 11:20	SAS
Specific conductance	umhos/cm	326	DEP FT1200	0.1	0.1		08/22/12 11:20	SAS
Dissolved Oxygen	mg/L	1.1	DEP FT1500	0.1	0.1		08/22/12 11:20	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.18	EPA 350.1	0.040	0.009	00/04/40 4= =4	08/28/12 12:18	MMF
Ammonium as NH4	mg/L	0.23	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	14	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	7.0	EPA 353.2 EPA 351.2	0.40	0.10	00/00/40 44-00	08/26/12 11:53	MMF
Total Kjeldahl Nitrogen	mg/L	3.4	EPA 331.2	0.20	0.05	08/23/12 11:26	08/27/12 12:26	MMF
Sample Description		TA4-PZ-16-I7						
Matrix		Groundwater						
SAL Sample Number		1209016-15						
Date/Time Collected		08/22/12 11:39						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								
рН	SU	5.1	DEP FT1100	0.1	0.1		08/22/12 11:39	SAS
Water Temperature	°C	26.2	DEP FT1400	0.1	0.1		08/22/12 11:39	SAS
Specific conductance	umhos/cm	231	DEP FT1200	0.1	0.1		08/22/12 11:39	SAS
Dissolved Oxygen	mg/L	0.6	DEP FT1500	0.1	0.1		08/22/12 11:39	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.025 I	EPA 350.1	0.040	0.009		08/28/12 12:20	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	7.6	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	4.4	EPA 353.2	0.40	0.10		08/26/12 11:56	MMF
Total Kjeldahl Nitrogen	mg/L	0.97	EPA 351.2	0.20	0.05	08/23/12 11:26	08/27/12 12:28	MMF
Sample Description		TA4-PZ-09-L8						
Matrix		Groundwater						
SAL Sample Number		1209016-16						
Date/Time Collected		08/22/12 11:58						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								
рН	SU	6.2	DEP FT1100	0.1	0.1		08/22/12 11:58	SAS
Water Temperature	°C	27.6	DEP FT1400	0.1	0.1		08/22/12 11:58	SAS

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA4-PZ-09-L8						
Matrix		Groundwater						
SAL Sample Number		1209016-16						
Date/Time Collected		08/22/12 11:58						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Specific conductance	umhos/cm	363	DEP FT1200	0.1	0.1		08/22/12 11:58	SAS
Dissolved Oxygen	mg/L	1.8	DEP FT1500	0.1	0.1		08/22/12 11:58	SAS
<u>Inorganics</u>			ED4.050.4	0.040			00/00/40 40 00	
Ammonia as N	mg/L	0.052	EPA 350.1	0.040	0.009	00/04/40 45 54	08/28/12 12:22	MMF
Ammonium as NH4	mg/L	0.07	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	12	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N) Total Kjeldahl Nitrogen	mg/L mg/L	8.1 2.3	EPA 353.2 EPA 351.2	0.40 0.20	0.10 0.05	08/23/12 11:26	08/26/12 11:58 08/27/12 12:30	MMF MMF
Total rycidalii rviii ogon	mg/L	2.0		0.20	0.00	00/20/12 11:20	00/21/12 12:00	1411411
Sample Description		TA4-PZ-16-L8						
Matrix		Groundwater						
SAL Sample Number		1209016-17						
Date/Time Collected Collected by		08/22/12 12:17 Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Date/ Fille Proceived		00/22/12 13:00						
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1		08/22/12 12:17	SAS
Water Temperature	°C	26.4	DEP FT1400	0.1	0.1		08/22/12 12:17	SAS
Specific conductance	umhos/cm	231	DEP FT1200	0.1	0.1		08/22/12 12:17	SAS
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		08/22/12 12:17	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.068	EPA 350.1	0.040	0.009		08/28/12 12:24	MMF
Ammonium as NH4	mg/L	0.09	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	8.3	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	5.4	EPA 353.2	0.40	0.10		08/26/12 12:00	MMF
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	08/23/12 11:26	08/27/12 12:31	MMF
Sample Description		TA4-PZ-09-TU14						
Matrix		Groundwater						
SAL Sample Number		1209016-18						
Date/Time Collected		08/22/12 13:51						
Collected by		Sean Schmidt						
Date/Time Received		08/22/12 15:00						
Field Parameters								
pH	SU	4.7	DEP FT1100	0.1	0.1		08/22/12 13:51	SAS
Water Temperature	°C	27.6	DEP FT1400	0.1	0.1		08/22/12 13:51	SAS
Specific conductance	umhos/cm	159	DEP FT1200	0.1	0.1		08/22/12 13:51	SAS

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Laboratory Report

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA4-PZ-09-TU14 Groundwater 1209016-18 08/22/12 13:51 Sean Schmidt 08/22/12 15:00						
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		08/22/12 13:51	SAS
Inorganics	J							
Ammonia as N	mg/L	0.082	EPA 350.1	0.040	0.009		08/28/12 12:26	MMF
Ammonium as NH4	mg/L	0.11	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	4.2	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	3.4	EPA 353.2	0.40	0.10		08/26/12 12:02	MMF
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	08/23/12 11:26	08/27/12 12:33	MMF
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA4-PZ-16-TU14 Groundwater 1209016-19 08/22/12 14:10 Sean Schmidt 08/22/12 15:00						
Field Parameters								
рН	SU	5.2	DEP FT1100	0.1	0.1		08/22/12 14:10	SAS
Water Temperature	°C	26.5	DEP FT1400	0.1	0.1		08/22/12 14:10	SAS
Specific conductance	umhos/cm	226	DEP FT1200	0.1	0.1		08/22/12 14:10	SAS
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		08/22/12 14:10	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.024 l	EPA 350.1	0.040	0.009		08/28/12 12:28	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	4.6	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	1.5	EPA 353.2	0.40	0.10	00/00/40 44:00	08/26/12 12:04	MMF
Total Kjeldahl Nitrogen	mg/L	0.61	EPA 351.2	0.20	0.05	08/23/12 11:26	08/27/12 12:35	MMF
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA4-PZ-09-TU16 Groundwater 1209016-20 08/22/12 13:13 Sean Schmidt 08/22/12 15:00						
Field Parameters								
pH	SU	5.0	DEP FT1100	0.1	0.1		08/22/12 13:13	SAS
Water Temperature	°C	27.5	DEP FT1400	0.1	0.1		08/22/12 13:13	SAS
Specific conductance	umhos/cm	271	DEP FT1200	0.1	0.1		08/22/12 13:13	SAS
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		08/22/12 13:13	SAS

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Project Name		S&GW Test	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA4-PZ-09-TU16 Groundwater 1209016-20 08/22/12 13:13 Sean Schmidt 08/22/12 15:00						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.090	EPA 350.1	0.040	0.009		08/28/12 12:34	MMF
Ammonium as NH4	mg/L	0.12	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	4.0	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	5.0	EPA 353.2	0.40	0.10		08/26/12 12:07	MMF
Total Kjeldahl Nitrogen	mg/L	4.1	EPA 351.2	0.20	0.05	08/23/12 11:26	08/27/12 14:19	MMF
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		TA4-PZ-16-TU16 Groundwater 1209016-21 08/22/12 13:32 Sean Schmidt 08/22/12 15:00						
Field Parameters								
рН	SU	5.1	DEP FT1100	0.1	0.1		08/22/12 13:32	SAS
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		08/22/12 13:32	SAS
Specific conductance	umhos/cm	237	DEP FT1200	0.1	0.1		08/22/12 13:32	SAS
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		08/22/12 13:32	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.025 I	EPA 350.1	0.040	0.009		08/28/12 12:36	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	5.1	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	2.5	EPA 353.2	0.40	0.10		08/27/12 10:53	MMF
Total Kjeldahl Nitrogen	mg/L	0.67	EPA 351.2	0.20	0.05	08/23/12 11:26	08/27/12 12:38	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte	Result	FQL	IVIDL	Ullits	Levei	Result	70KEC	LIIIIIIS	KFD	LIIIII
Batch BH22305 - COD prep										
Blank (BH22305-BLK1)					Prepared:	08/23/12 Ar	nalyzed: 08	/24/12		
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH22305-BS1)					Prepared:	08/23/12 Ar	nalyzed: 08	/24/12		
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BH22305-MS1)		Source: 1	209016-01		Prepared:	08/23/12 Ar	nalyzed: 08	/24/12		
Chemical Oxygen Demand	54	25	10	mg/L	50	11	86	85-115		
Matrix Spike Dup (BH22305-MSD	01)	Source: 1	209016-01		Prepared:	08/23/12 Ar	nalyzed: 08	/24/12		
Chemical Oxygen Demand	56	25	10	mg/L	50	11	90	85-115	4	32
Batch BH22309 - Ion Chroma	tography 300.0	Prep								
Blank (BH22309-BLK1)	<u> </u>				Prepared 8	& Analyzed:	08/23/12			
Sulfate	0.20 U	0.60	0.20	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22309-BS1)					Prepared 8	& Analyzed:	08/23/12			
Sulfate	8.99	0.60	0.20	mg/L	9.0		100	85-115		
Fluoride	0.926	0.040	0.010	mg/L	0.90		103	85-115		
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115		
Orthophosphate as P	0.940	0.040	0.010	mg/L	0.90		104	85-115		
LCS Dup (BH22309-BSD1)					Prepared 8	& Analyzed:	08/23/12			
Orthophosphate as P	0.857	0.040	0.010	mg/L	0.90		95	85-115	9	200
Nitrate (as N)	1.69	0.04	0.01	mg/L	1.7		99	85-115	0	200
Fluoride	0.876	0.040	0.010	mg/L	0.90		97	85-115	6	200
Sulfate	8.92	0.60	0.20	mg/L	9.0		99	85-115	8.0	200

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
7 that yes	rtocart			O mile	20701	rtocart	701120	Limito	111 2	
Batch BH22309 - Ion Chromato	graphy 300.0	Prep								
Matrix Spike (BH22309-MS1)		Source: 1	209443-02		Prepared 8	k Analyzed:	08/23/12			
Nitrate (as N)	3.98	0.04	0.01	mg/L	1.7	2.14	108	85-115		
Sulfate	28.5	0.60	0.20	mg/L	9.0	19.7	98	85-115		
Fluoride	1.02	0.040	0.010	mg/L	0.90	0.108	101	85-115		
Orthophosphate as P	6.52	0.040	0.010	mg/L	0.90	5.60	102	85-115		
Matrix Spike (BH22309-MS2)		Source: 1	209511-01		Prepared 8	k Analyzed:	08/23/12			
Sulfate	9.19	0.60	0.20	mg/L	9.0	0.556	96	85-115		
Orthophosphate as P	0.824	0.040	0.010	mg/L	0.90	ND	92	85-115		
Nitrate (as N)	1.80	0.04	0.01	mg/L	1.7	ND	106	85-115		
Fluoride	1.06	0.040	0.010	mg/L	0.90	0.208	95	85-115		
Batch BH22311 - Digestion for	TP by EPA 36	55.2/SM4500	PE							
Blank (BH22311-BLK1)					Prepared: (08/23/12 Ar	nalyzed: 08	/24/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22311-BS1)					Prepared: (08/23/12 Ar	nalyzed: 08	/24/12		
Phosphorous - Total as P	0.834	0.040	0.010	mg/L	0.80		104	90-110		
Matrix Spike (BH22311-MS1)		Source: 1	209380-02		Prepared: (08/23/12 Ar	nalyzed: 08	/24/12		
Phosphorous - Total as P	1.57	0.040	0.010	mg/L	1.0	0.577	99	75-125		
Matrix Spike Dup (BH22311-MSD1)		Source: 1	209380-02		Prepared: (08/23/12 Ar	nalyzed: 08	/24/12		
Phosphorous - Total as P	1.68	0.040	0.010	mg/L	1.0	0.577	110	75-125	7	25
Batch BH22315 - Digestion for	TKN by EPA	351.2								
3										
Blank (BH22315-BLK1)					Prepared: (08/23/12 Ar	nalyzed: 08	/27/12		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22315 - Digestion for T	KN by EPA	351.2								
LCS (BH22315-BS1)	<u>-</u>				Prepared:	08/23/12 Ar	nalyzed: 08/	/27/12		
Total Kjeldahl Nitrogen	2.61	0.20	0.05	mg/L	2.5		103	90-110		
Matrix Spike (BH22315-MS1)		Source: 1	209014-14		Prepared:	08/23/12 Ar	nalyzed: 08/	/27/12		
Total Kjeldahl Nitrogen	3.62	0.20	0.05	mg/L	2.5	0.803	111	80-120		
Matrix Spike Dup (BH22315-MSD1)		Source: 1	209014-14		Prepared:	08/23/12 Ar	nalyzed: 08/	/27/12		
Total Kjeldahl Nitrogen	3.53	0.20	0.05	mg/L	2.5	0.803	108	80-120	3	20
Batch BH22316 - Digestion for 1	KN by EPA	351.2								
Blank (BH22316-BLK1)	•				Prepared:	08/23/12 Ar	nalyzed: 08/	/27/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22316-BS1)					Prepared:	08/23/12 Ar	nalyzed: 08/	/27/12		
Total Kjeldahl Nitrogen	2.49	0.20	0.05	mg/L	2.5		98	90-110		
Matrix Spike (BH22316-MS1)		Source: 1	209404-07		Prepared:	08/23/12 Ar	nalyzed: 08/	/27/12		
Total Kjeldahl Nitrogen	2.69	0.20	0.05	mg/L	2.5	0.409	90	80-120		
Matrix Spike Dup (BH22316-MSD1)		Source: 1	209404-07		Prepared:	08/23/12 Ar	nalyzed: 08/	/27/12		
Total Kjeldahl Nitrogen	2.92	0.20	0.05	mg/L	2.5	0.409	99	80-120	8	20
Batch BH22408 - Ion Chromatog	raphy 300.0	Prep								
Blank (BH22408-BLK1)		-			Prepared 8	k Analyzed:	08/24/12			
Chloride	0.050 U	0.20	0.050	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619

September 6, 2012 Work Order: 1209016

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22408 - Ion Chroma	tography 300.0	Prep								
LCS (BH22408-BS1)					Prepared 8	& Analyzed:	08/24/12			
Orthophosphate as P	0.975	0.040	0.010	mg/L	0.90		108	85-115		
Fluoride	0.975	0.040	0.010	mg/L	0.90		108	85-115		
Sulfate	8.88	0.60	0.20	mg/L	9.0		99	85-115		
Chloride	2.92	0.20	0.050	mg/L	3.0		97	85-115		
Nitrate (as N)	1.70	0.04	0.01	mg/L	1.7		100	85-115		
LCS Dup (BH22408-BSD1)					Prepared 8	& Analyzed:	08/24/12			
Nitrate (as N)	1.67	0.04	0.01	mg/L	1.7		98	85-115	2	200
Sulfate	8.69	0.60	0.20	mg/L	9.0		97	85-115	2	200
Orthophosphate as P	0.925	0.040	0.010	mg/L	0.90		103	85-115	5	200
Fluoride	0.950	0.040	0.010	mg/L	0.90		106	85-115	3	200
Chloride	2.90	0.20	0.050	mg/L	3.0		97	85-115	0.7	200
Matrix Spike (BH22408-MS1)		Source: 1	209567-01		Prepared 8	& Analyzed:	08/24/12			
Nitrate (as N)	3.72	0.04	0.01	mg/L	1.7	1.84	111	85-115		
Fluoride	1.02	0.040	0.010	mg/L	0.90	0.0692	106	85-115		
Orthophosphate as P	4.71	0.040	0.010	mg/L	0.90	3.78	103	85-115		
Sulfate	44.7	0.60	0.20	mg/L	9.0	35.5	102	85-115		
Chloride	41.2 +0	0.20	0.050	mg/L	3.0	40.1	37	80-120		
Matrix Spike (BH22408-MS2)		Source: 1	209571-03		Prepared 8	& Analyzed:	08/24/12			
Chloride	44.5 +O	0.20	0.050	mg/L	3.0	43.9	20	80-120		
Fluoride	1.05	0.040	0.010	mg/L	0.90	0.118	104	85-115		
Nitrate (as N)	2.20	0.04	0.01	mg/L	1.7	0.410	105	85-115		
Sulfate	34.6	0.60	0.20	mg/L	9.0	25.0	107	85-115		
Orthophosphate as P	6.88	0.040	0.010	mg/L	0.90	6.01	97	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22424 - Nitrate 353.2	hv seal									
Blank (BH22424-BLK1)	. by cour				Prepared 8	& Analyzed:	08/26/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L	<u>-</u>					
LCS (BH22424-BS1)					Prepared 8	& Analyzed:	08/26/12			
Nitrate+Nitrite (N)	0.822	0.04	0.01	mg/L	0.80		103	90-110		
Matrix Spike (BH22424-MS1)		Source: 1	1209380-04		Prepared 8	& Analyzed:	08/26/12			
Nitrate+Nitrite (N)	1.23	0.04	0.01	mg/L	1.0	0.392	84	77-119		
Matrix Spike Dup (BH22424-MSD	1)	Source: 1	1209380-04		Prepared 8	& Analyzed:	08/26/12			
Nitrate+Nitrite (N)	1.33	0.04	0.01	mg/L	1.0	0.392	94	77-119	8	20
Batch BH22601 - Ammonia by	SEAL									
Blank (BH22601-BLK1)					Prepared 8	& Analyzed:	08/26/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22601-BS1)					Prepared 8	& Analyzed:	08/26/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		97	90-110		
Matrix Spike (BH22601-MS1)		Source: 1	1209380-04		Prepared 8	& Analyzed:	08/26/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.032	94	90-110		
Matrix Spike Dup (BH22601-MSD	1)	Source: 1	1209380-04		Prepared 8	& Analyzed:	08/26/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.032	93	90-110	2	10
Batch BH22701 - Digestion fo	r TKN by EPA	351.2								
Blank (BH22701-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22701 - Digestion fo	or TKN by EPA	351.2								
LCS (BH22701-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	2.65	0.20	0.05	mg/L	2.5		105	90-110		
Matrix Spike (BH22701-MS1)		Source: 1	208987-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	7.94	0.20	0.05	mg/L	2.5	5.56	94	80-120		
Matrix Spike Dup (BH22701-MSD	01)	Source: 1	208987-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	8.31	0.20	0.05	mg/L	2.5	5.56	108	80-120	4	20
Batch BH22704 - Nitrate 353.	2 by seal									
Blank (BH22704-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22704-BS1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.786	0.04	0.01	mg/L	0.80		98	90-110		
Matrix Spike (BH22704-MS1)		Source: 1	209016-21		Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	12.4	0.40	0.10	mg/L	10	2.55	99	77-119		
Matrix Spike Dup (BH22704-MSD	01)	Source: 1	209016-21		Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	12.7	0.40	0.10	mg/L	10	2.55	102	77-119	2	20
Batch BH22711 - COD prep										
Blank (BH22711-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Chemical Oxygen Demand	10 U	25	10	mg/L			<u> </u>			<u> </u>

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte	Result	FQL	IVIDE	Ullits	Level	Result	70KEC	LIIIIIIS	KFD	LIIIII
Batch BH22711 - COD prep										
LCS (BH22711-BS1)					Prepared 8	& Analyzed:	08/27/12			
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BH22711-MS1)		Source: 1	209016-05		Prepared 8	& Analyzed:	08/27/12			
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115		
Matrix Spike Dup (BH22711-MSD1)	Source: 1	209016-05		Prepared 8	& Analyzed:	08/27/12			
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115	0	32
Batch BH22714 - Ion Chromat	ography 300.0	Prep								
Blank (BH22714-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH22714-BS1)					Prepared 8	& Analyzed:	08/27/12			
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115		
LCS Dup (BH22714-BSD1)					Prepared 8	& Analyzed:	08/27/12			
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115	0	200
Matrix Spike (BH22714-MS1)		Source: 1	209367-01		Prepared 8	& Analyzed:	08/27/12			
Chloride	51.0 +O	0.20	0.050	mg/L	3.0	231	NR	80-120		
Matrix Spike (BH22714-MS2)		Source: 1	209016-06	i	Prepared 8	& Analyzed:	08/27/12			
Chloride	24.6	0.20	0.050	mg/L	6.0	17.9	112	80-120		
Sulfate	73.2	0.60	0.20	mg/L	18	54.1	106	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

				Spike	Source		%REC		RPD
esult	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
phy 300.0 P	rep								
				Prepared &	Analyzed: (08/28/12			
).050 U	0.20	0.050	mg/L						
				Prepared &	Analyzed: (08/28/12			
2.97	0.20	0.050	mg/L	3.0		99	85-115		
				Prepared &	Analyzed: (08/28/12			
2.96	0.20	0.050	mg/L	3.0		99	85-115	0.3	200
	Source: 1	209016-16		Prepared &	Analyzed: (08/28/12			
14.8	0.20	0.050	mg/L	3.0	11.5	110	80-120		
	Source: 1	209020-06		Prepared &	Analyzed: (08/28/12			
20.6	0.20	0.050	mg/L	3.0	17.2	113	80-120		
oy EPA 365	.2/SM4500)PE							
				Prepared: (08/27/12 An	alyzed: 08/	28/12		
).010 U	0.040	0.010	,,						
		0.010	mg/L						
		0.010	mg/L	Prepared: (08/27/12 An	alyzed: 08/	28/12		
0.790	0.040	0.010	mg/L mg/L	Prepared: 0.80	08/27/12 An	alyzed: 08/ 99	28/12 90-110		
).790	0.040			0.80	08/27/12 An	99	90-110		
1.02	0.040	0.010		0.80		99	90-110		
	0.040 Source: 1 0.040	0.010 209020-09	mg/L	0.80 Prepared: 0	08/27/12 An	99 alyzed: 08/ 95	90-110 28/12 75-125		
	2.96 14.8 20.6 Dy EPA 365	2.97 0.20 2.96 0.20 Source: 1 14.8 0.20 Source: 1 20.6 0.20 by EPA 365.2/SM4500	2.97 0.20 0.050 2.96 0.20 0.050 Source: 1209016-16 14.8 0.20 0.050 Source: 1209020-06 20.6 0.20 0.050 by EPA 365.2/SM4500PE	2.97 0.20 0.050 mg/L 2.96 0.20 0.050 mg/L Source: 1209016-16 14.8 0.20 0.050 mg/L Source: 1209020-06 20.6 0.20 0.050 mg/L py EPA 365.2/SM4500PE	Prepared 8 0.050 U 0.20 0.050 U 0.20 0.050 0.050 0.050 0.20 0.050 0.0	Prepared & Analyzed: 0.050 U 0.20 0.050 mg/L 2.97 0.20 0.050 mg/L 3.0 Prepared & Analyzed: 0.0296 0.20 0.050 mg/L 3.0 Source: 1209016-16 Prepared & Analyzed: 0.000 mg/L 3.0 11.5 Source: 1209020-06 Prepared & Analyzed: 0.000 mg/L 3.0 17.2 20.6 0.20 0.050 mg/L 3.0 17.2 Prepared & Analyzed: 0.000 mg/L 3.0 17.2 Prepared & Analyzed: 0.0000 mg/L 3.0 17.2 Prepared: 0.0000 mg/L 3.0 17.2 Prepared: 0.00000 mg/L 3.0 17.2	Prepared & Analyzed: 08/28/12 0.050 U 0.20 0.050 mg/L 2.97 0.20 0.050 mg/L 2.96 0.20 0.050 mg/L 3.0 99 Prepared & Analyzed: 08/28/12 2.96 0.20 0.050 mg/L 3.0 99 Prepared & Analyzed: 08/28/12 2.96 0.20 0.050 mg/L 4.8 0.20 0.050 mg/L 5ource: 1209016-16 Prepared & Analyzed: 08/28/12 Prepared & Analyzed: 08/28/12 2.06 0.20 0.050 mg/L 2.06 0.20 0.050 mg/L 3.0 11.5 110 Prepared & Analyzed: 08/28/12 2.07 0.28 0.29 0.050 mg/L 2.08 0.20 0.050 mg/L 3.0 17.2 113 2.09 EPA 365.2/SM4500PE	Prepared & Analyzed: 08/28/12 0.050 U 0.20 0.050 mg/L 2.97 0.20 0.050 mg/L 2.96 0.20 0.050 mg/L Source: 1209016-16 Prepared & Analyzed: 08/28/12 14.8 0.20 0.050 mg/L 3.0 99 85-115 Prepared & Analyzed: 08/28/12 14.8 0.20 0.050 mg/L 3.0 11.5 110 80-120 Source: 1209020-06 Prepared & Analyzed: 08/28/12 20.6 0.20 0.050 mg/L 3.0 17.2 113 80-120 Prepared & Analyzed: 08/28/12 20.6 0.20 0.050 mg/L 20.6 0.20 0.050 mg/L 20.6 0.20 0.050 mg/L 20.6 0.20 0.050 mg/L 20.6 0.20 0.050 mg/L 20.7 2 113 80-120	Prepared & Analyzed: 08/28/12 2.97

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22723 - TOC prep										
Blank (BH22723-BLK1)					Prepared 8	k Analyzed:	08/29/12			
Total Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BH22723-BS1)					Prepared 8	& Analyzed:	08/29/12			
Total Organic Carbon	10.0	1.0	0.50	mg/L	10		100	90-110		
Matrix Spike (BH22723-MS1)		Source: 1	209015-06		Prepared 8	& Analyzed:	08/29/12			
Total Organic Carbon	10.1	1.0	0.50	mg/L	10	1.45	86	85-115		
Matrix Spike Dup (BH22723-MSD1)	Source: 1	209015-06		Prepared 8	& Analyzed:	08/29/12			
Total Organic Carbon	11.1	1.0	0.50	mg/L	10	1.45	96	85-115	10	10
Batch BH22804 - Ammonia by	SEAL									
Blank (BH22804-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22804-BS1)					Prepared 8	k Analyzed:	08/28/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		99	90-110		
Matrix Spike (BH22804-MS1)		Source: 1	209016-10		Prepared 8	k Analyzed:	08/28/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	0.011	95	90-110		
Matrix Spike Dup (BH22804-MSD1)	Source: 1	209016-10		Prepared 8	k Analyzed:	08/28/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	0.011	96	90-110	0.5	10
Batch BH22825 - alkalinity										
Blank (BH22825-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22825 - alkalinity										
Batch BH22029 - alkalility										
LCS (BH22825-BS1)					Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22825-MS1)		Source: 1	209020-06		Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	130	8.0	2.0	mg/L	120	4.2	100	80-120		
Matrix Spike Dup (BH22825-MSD	1)	Source: 1	209020-06		Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	130	8.0	2.0	mg/L	120	4.2	100	80-120	0	26

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Batch BH22124 - TOC prep										
Blank (BH22124-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BH22124-BS1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.2	1.0	0.50	mg/L	10		102	90-110		
Matrix Spike (BH22124-MS1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.0	1.0	0.50	mg/L	10	ND	100	85-125		
Matrix Spike Dup (BH22124-MSD1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	9.67	1.0	0.50	mg/L	10	ND	97	85-125	4	25

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Metals - Quality Control

Calcium	Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Prepared & Analyzed: 08/24/12 Calcium	Batch BH22401 - Metals Prep	aration for EPA	Method 20	00.7							
Boron 0.050 U 0.10 0.050 mg/L	Blank (BH22401-BLK1)					Prepared 8	& Analyzed:	08/24/12			
Solidim	Calcium	0.042 U	0.50	0.042	mg/L						
Potassium	Boron	0.050 U	0.10	0.050	mg/L						
Iron	Sodium	0.13 U	0.50	0.13	mg/L						
Manganese Magnesium 0.0010 U 0.001 U 0.50 0.020 mg/L mg/L mg/L Prepared & Analyzed: 08/24/12 LCS (BH22401-BS1) Prepared & Analyzed: 08/24/12 Iron 7.7 0.10 0.020 mg/L 8.0 97 85-115 97 85-115 Boron 0.39 0.110 0.050 mg/L 0.40 98 85-115 85-115 Sodium 19 0.50 0.13 mg/L 20 94 85-115 94 85-115 Magnesium 22 0.50 0.020 mg/L 20 108 85-115 85-115 Magnesium 22 0.50 0.020 mg/L 20 104 85-115 85-115 Potassium 20 0.050 0.010 mg/L 20 104 85-115 85-115 Matrix Spike (BH22401-MS1) Source: 1209016-04 Prepared & Analyzed: 08/24/12 Prepared & Analyzed: 08/24/12 Potassium 23 0.050 0.010 mg/L 20 5.1 90 70-130 90 70-130 Boron 0.47 0.10 0.050 mg/L 0.000 mg/L 0.000 0.079 98 70-130 70-130 Manganese 0.42 0.010 0.0010 mg/L 0.40 0.033 97 70-130 Iron 7.9 0.10 0.0010 mg/L 0.0010 mg/L 0.00 0.003 98 70-130 Iron 7.9 0.10 0.0020 mg/L 8.0 0.039 98 70-130 Galcium 50 0.044 0.003 mg/L 0.0010 mg/L 0.00 0.000 mg/L 0.000 0.0000 mg/L 0.0000 0.0000 mg/L 0.0000 0.0000 0.000000 0.0000 0.0000 0.0000 0.0000 0.00000 0.00000 0.00000 0.0000 0.0000 0.0000 0.00000 0.00000 0.0000 0.0000 0.0000 0.0000 0.0000 0	Potassium	0.067	0.050	0.010	mg/L						
Magnesium 0.020 U 0.50 0.020 mg/L	Iron	0.020 U	0.10	0.020	mg/L						
Prepared & Analyzed: \(\text{Ok}\) Prepared	Manganese	0.0010 U	0.010	0.0010	mg/L						
Iron	Magnesium	0.020 U	0.50	0.020	mg/L						
Boron 0.39	LCS (BH22401-BS1)					Prepared 8	k Analyzed:	08/24/12			
Sodium	Iron	7.7	0.10	0.020	mg/L	8.0		97	85-115		
Manganese 0.38 0.010 0.0010 mg/L 0.40 94 85-115 Magnesium 22 0.50 0.020 mg/L 20 108 85-115 Calcium 21 0.50 0.042 mg/L 20 104 85-115 Potassium 20 0.050 0.010 mg/L 20 101 85-115 Matrix Spike (BH22401-MS1) Source: 1209016-04 Prepared & Analyzed: 08/24/12 Potassium 23 0.050 0.010 mg/L 20 5.1 90 70-130 Boron 0.47 0.10 0.050 mg/L 0.40 0.079 98 70-130 Magnesium 27 0.50 0.020 mg/L 0.40 0.033 97 70-130 Manganese 0.42 0.010 0.0010 mg/L 0.40 0.033 97 70-130 Sodium 41 0.50 0.13 mg/L 20 22 91 <td< td=""><td>Boron</td><td>0.39</td><td>0.10</td><td>0.050</td><td>mg/L</td><td>0.40</td><td></td><td>98</td><td>85-115</td><td></td><td></td></td<>	Boron	0.39	0.10	0.050	mg/L	0.40		98	85-115		
Magnesium 22 0.50 0.020 mg/L 20 108 85-115 Calcium 21 0.50 0.042 mg/L 20 104 85-115 Potassium 20 0.050 0.010 mg/L 20 101 85-115 Matrix Spike (BH22401-MS1) Source: 1209016-04 Prepared & Analyzed: 08/24/12 Potassium 23 0.050 0.010 mg/L 20 5.1 90 70-130 Boron 0.47 0.10 0.050 mg/L 0.40 0.079 98 70-130 Magnesium 27 0.50 0.020 mg/L 20 7.5 98 70-130 Manganese 0.42 0.010 0.0010 mg/L 0.40 0.033 97 70-130 Sodium 41 0.50 0.13 mg/L 20 22 91 70-130 Matrix Spike (BH22401-MS2) Source: 1209415-01 Prepared & Analyzed: 08/24/12 Prepared & Analyzed: 08/24/12	Sodium	19	0.50	0.13	mg/L	20		94	85-115		
Calcium 21 0.50 0.042 mg/L 20 104 85-115 Potassium 20 0.050 0.010 mg/L 20 101 85-115 Matrix Spike (BH22401-MS1) Source: 1209016-04 Prepared & Analyzed: 08/24/12 Potassium 23 0.050 0.010 mg/L 20 5.1 90 70-130 Boron 0.47 0.10 0.050 mg/L 0.40 0.079 98 70-130 Magnesium 27 0.50 0.020 mg/L 20 7.5 98 70-130 Manganese 0.42 0.010 0.0010 mg/L 0.40 0.033 97 70-130 Sodium 41 0.50 0.13 mg/L 20 22 91 70-130 Calcium 50 0.50 0.042 mg/L 20 31 97 70-130 Marrix Spike (BH22401-MS2) Source: 1209415-01 Prepared & Analyzed: 08/24/12 <td>Manganese</td> <td>0.38</td> <td>0.010</td> <td>0.0010</td> <td>mg/L</td> <td>0.40</td> <td></td> <td>94</td> <td>85-115</td> <td></td> <td></td>	Manganese	0.38	0.010	0.0010	mg/L	0.40		94	85-115		
Potassium 20	Magnesium	22	0.50	0.020	mg/L	20		108	85-115		
Matrix Spike (BH22401-MS1) Source: 1209016-04 Prepared & Analyzed: 08/24/12 Potassium 23 0.050 0.010 mg/L 20 5.1 90 70-130 Boron 0.47 0.10 0.050 mg/L 0.40 0.079 98 70-130 Magnesium 27 0.50 0.020 mg/L 20 7.5 98 70-130 Manganese 0.42 0.010 0.0010 mg/L 0.40 0.033 97 70-130 Iron 7.9 0.10 0.020 mg/L 8.0 0.039 98 70-130 Sodium 41 0.50 0.13 mg/L 20 22 91 70-130 Matrix Spike (BH22401-MS2) Source: 1209415-01 Prepared & Analyzed: 08/24/12 Manganese 0.39 0.010 0.0010 mg/L 0.40 ND 97 70-130 Boron 0.44 0.10 0.050 mg/L 0.40 0.052 98	Calcium	21	0.50	0.042	mg/L	20		104	85-115		
Potassium 23 0.050 0.010 mg/L 20 5.1 90 70-130 Boron 0.47 0.10 0.050 mg/L 0.40 0.079 98 70-130 Magnesium 27 0.50 0.020 mg/L 20 7.5 98 70-130 Manganese 0.42 0.010 0.0010 mg/L 0.40 0.033 97 70-130 Iron 7.9 0.10 0.020 mg/L 8.0 0.039 98 70-130 Sodium 41 0.50 0.13 mg/L 20 22 91 70-130 Calcium 50 0.50 0.042 mg/L 20 31 97 70-130 Matrix Spike (BH22401-MS2) Source: 1209415-01 Prepared & Analyzed: 08/24/12 Manganese 0.39 0.010 0.0010 mg/L 0.40 ND 97 70-130 Boron 0.44 0.10 0.050 mg/L 0.40 0.052 98 70-130 Iron 7.9 0.10 0.020 mg/L 8.0 0.025 99 70-130 Calcium 54 0.50 0.042 mg/L 20 33 106 70-130 Calcium 55 0.000 0.001 mg/L 0.40 0.052 99 70-130 Calcium 56 0.50 0.042 mg/L 20 33 106 70-130 Calcium 57 0.50 0.042 mg/L 20 33 106 70-130 Calcium 33 0.50 0.13 mg/L 20 14 94 70-130 Potassium 22 0.050 0.010 mg/L 20 3.1 97 70-130	Potassium	20	0.050	0.010	mg/L	20		101	85-115		
Boron 0.47 0.10 0.050 mg/L 0.40 0.079 98 70-130	Matrix Spike (BH22401-MS1)		Source: 1	1209016-04		Prepared 8	k Analyzed:	08/24/12			
Magnesium 27 0.50 0.020 mg/L 20 7.5 98 70-130 Manganese 0.42 0.010 0.0010 mg/L 0.40 0.033 97 70-130 Iron 7.9 0.10 0.020 mg/L 8.0 0.039 98 70-130 Sodium 41 0.50 0.13 mg/L 20 22 91 70-130 Calcium 50 0.50 0.042 mg/L 20 31 97 70-130 Marganese 0.39 0.010 0.0010 mg/L 0.40 ND 97 70-130 Boron 0.44 0.10 0.050 mg/L 0.40 ND 97 70-130 Iron 7.9 0.10 0.020 mg/L 8.0 0.025 98 70-130 Calcium 54 0.50 0.042 mg/L 20 33 106 70-130 Sodium 33 0.50	Potassium	23	0.050	0.010	mg/L	20	5.1	90	70-130		
Manganese 0.42 0.010 0.0010 mg/L 0.40 0.033 97 70-130 Iron 7.9 0.10 0.020 mg/L 8.0 0.039 98 70-130 Sodium 41 0.50 0.13 mg/L 20 22 91 70-130 Calcium 50 0.50 0.042 mg/L 20 31 97 70-130 Matrix Spike (BH22401-MS2) Source: 1209415-01 Prepared & Analyzed: 08/24/12 Manganese 0.39 0.010 0.0010 mg/L 0.40 ND 97 70-130 Boron 0.44 0.10 0.050 mg/L 0.40 0.052 98 70-130 Iron 7.9 0.10 0.020 mg/L 8.0 0.025 99 70-130 Calcium 54 0.50 0.042 mg/L 20 33 106 70-130 Sodium 33 0.50 0.13 mg/L	Boron	0.47	0.10	0.050	mg/L	0.40	0.079	98	70-130		
Iron	Magnesium	27	0.50	0.020	mg/L	20	7.5	98	70-130		
Sodium 41 0.50 0.13 mg/L 20 22 91 70-130 Calcium 50 0.50 0.042 mg/L 20 31 97 70-130 Matrix Spike (BH22401-MS2) Source: 1209415-01 Prepared & Analyzed: 08/24/12 Manganese 0.39 0.010 0.0010 mg/L 0.40 ND 97 70-130 Boron 0.44 0.10 0.050 mg/L 0.40 0.052 98 70-130 Iron 7.9 0.10 0.020 mg/L 8.0 0.025 99 70-130 Calcium 54 0.50 0.042 mg/L 20 33 106 70-130 Sodium 33 0.50 0.13 mg/L 20 14 94 70-130 Potassium 22 0.050 0.010 mg/L 20 3.1 97 70-130	Manganese	0.42	0.010	0.0010	mg/L	0.40	0.033	97	70-130		
Calcium 50 0.50 0.042 mg/L 20 31 97 70-130 Matrix Spike (BH22401-MS2) Source: 1209415-01 Prepared & Analyzed: 08/24/12 Manganese 0.39 0.010 0.0010 mg/L 0.40 ND 97 70-130 Boron 0.44 0.10 0.050 mg/L 0.40 0.052 98 70-130 Iron 7.9 0.10 0.020 mg/L 8.0 0.025 99 70-130 Calcium 54 0.50 0.042 mg/L 20 33 106 70-130 Sodium 33 0.50 0.13 mg/L 20 14 94 70-130 Potassium 22 0.050 0.010 mg/L 20 3.1 97 70-130	Iron	7.9	0.10	0.020	mg/L	8.0	0.039	98	70-130		
Matrix Spike (BH22401-MS2) Source: 1209415-01 Prepared & Analyzed: 08/24/12 Manganese 0.39 0.010 0.0010 mg/L 0.40 ND 97 70-130 Boron 0.44 0.10 0.050 mg/L 0.40 0.052 98 70-130 Iron 7.9 0.10 0.020 mg/L 8.0 0.025 99 70-130 Calcium 54 0.50 0.042 mg/L 20 33 106 70-130 Sodium 33 0.50 0.13 mg/L 20 14 94 70-130 Potassium 22 0.050 0.010 mg/L 20 3.1 97 70-130	Sodium	41	0.50	0.13	mg/L	20	22	91	70-130		
Manganese 0.39 0.010 0.050 mg/L 0.40 ND 97 70-130 Boron 0.44 0.10 0.050 mg/L 0.40 0.052 98 70-130 Iron 7.9 0.10 0.020 mg/L 8.0 0.025 99 70-130 Calcium 54 0.50 0.042 mg/L 20 33 106 70-130 Sodium 33 0.50 0.13 mg/L 20 14 94 70-130 Potassium 22 0.050 0.010 mg/L 20 3.1 97 70-130	Calcium	50	0.50	0.042	mg/L	20	31	97	70-130		
Boron 0.44 0.10 0.050 mg/L 0.40 0.052 98 70-130 Iron 7.9 0.10 0.020 mg/L 8.0 0.025 99 70-130 Calcium 54 0.50 0.042 mg/L 20 33 106 70-130 Sodium 33 0.50 0.13 mg/L 20 14 94 70-130 Potassium 22 0.050 0.010 mg/L 20 3.1 97 70-130	Matrix Spike (BH22401-MS2)		Source: 1	1209415-01		Prepared 8	k Analyzed:	08/24/12			
Iron 7.9 0.10 0.020 mg/L 8.0 0.025 99 70-130 Calcium 54 0.50 0.042 mg/L 20 33 106 70-130 Sodium 33 0.50 0.13 mg/L 20 14 94 70-130 Potassium 22 0.050 0.010 mg/L 20 3.1 97 70-130	Manganese	0.39	0.010	0.0010	mg/L	0.40	ND	97	70-130		
Calcium 54 0.50 0.042 mg/L 20 33 106 70-130 Sodium 33 0.50 0.13 mg/L 20 14 94 70-130 Potassium 22 0.050 0.010 mg/L 20 3.1 97 70-130	Boron	0.44	0.10	0.050	mg/L	0.40	0.052	98	70-130		
Sodium 33 0.50 0.13 mg/L 20 14 94 70-130 Potassium 22 0.050 0.010 mg/L 20 3.1 97 70-130	Iron	7.9	0.10	0.020	mg/L	8.0	0.025	99	70-130		
Potassium 22 0.050 0.010 mg/L 20 3.1 97 70-130	Calcium	54	0.50	0.042	mg/L	20	33	106	70-130		
•	Sodium	33	0.50	0.13	mg/L	20	14	94	70-130		
	Potassium	22	0.050	0.010	mg/L	20	3.1	97	70-130		
	Magnesium	27	0.50	0.020	mg/L	20	6.1	103	70-130		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Metals - Quality Control

Analyte Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22401 - Metals Preparation for EP	A Method 20	0.7							
Matrix Spike Dup (BH22401-MSD1)	Source: 1	209016-04		Prepared 8	& Analyzed:	08/24/12			
Iron 8.0	0.10	0.020	mg/L	8.0	0.039	99	70-130	1	30
Potassium 24	0.050	0.010	mg/L	20	5.1	93	70-130	3	30
Boron 0.48	0.10	0.050	mg/L	0.40	0.079	100	70-130	2	30
Magnesium 27	0.50	0.020	mg/L	20	7.5	99	70-130	1	30
Sodium 41	0.50	0.13	mg/L	20	22	92	70-130	0.7	30
Manganese 0.43	0.010	0.0010	mg/L	0.40	0.033	98	70-130	1	30
Calcium 50	0.50	0.042	mg/L	20	31	95	70-130	0.9	30
Matrix Spike Dup (BH22401-MSD2)	Source: 1	209415-01		Prepared 8	& Analyzed:	08/24/12			
Calcium 52	0.50	0.042	mg/L	20	33	98	70-130	3	30
Potassium 22	0.050	0.010	mg/L	20	3.1	94	70-130	2	30
Sodium 33	0.50	0.13	mg/L	20	14	93	70-130	0.6	30
Manganese 0.40	0.010	0.0010	mg/L	0.40	ND	100	70-130	3	30
Magnesium 26	0.50	0.020	mg/L	20	6.1	100	70-130	3	30
Boron 0.45	0.10	0.050	mg/L	0.40	0.052	101	70-130	3	30
Iron 8.0	0.10	0.020	mg/L	8.0	0.025	100	70-130	1	30
Batch BH22403 - Metals Preparation for EP	A Method 20	0.7							
Blank (BH22403-BLK1)				Prepared 8	k Analyzed:	08/29/12			
Iron 0.020 U	0.10	0.020	mg/L						
Boron 0.050 U	0.10	0.050	mg/L						
Potassium 0.010 U	0.050	0.010	mg/L						
Sodium 0.13 U	0.50	0.13	mg/L						
Manganese 0.0010 U	0.010	0.0010	mg/L						
Calcium 0.042 U	0.50	0.042	mg/L						
Magnesium 0.020 U	0.50	0.020	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22403 - Metals Prepa	aration for EP	A Method 20	00.7							
LCS (BH22403-BS1)					Prepared 8	& Analyzed: (08/29/12			
Sodium	20	0.50	0.13	mg/L	20		99	85-115		
Magnesium	20	0.50	0.020	mg/L	20		98	85-115		
Manganese	0.39	0.010	0.0010	mg/L	0.40		98	85-115		
Iron	7.8	0.10	0.020	mg/L	8.0		98	85-115		
Boron	0.39	0.10	0.050	mg/L	0.40		98	85-115		
Potassium	18	0.050	0.010	mg/L	20		92	85-115		
Calcium	20	0.50	0.042	mg/L	20		99	85-115		
Matrix Spike (BH22403-MS1)		Source: 1	1209534-01		Prepared 8	& Analyzed: (08/29/12			
Boron	0.64	0.10	0.050	mg/L	0.40	0.23	100	70-130		
Calcium	72	0.50	0.042	mg/L	20	53	99	70-130		
Manganese	0.39	0.010	0.0010	mg/L	0.40	0.0016	97	70-130		
Iron	7.8	0.10	0.020	mg/L	8.0	0.023	98	70-130		
Magnesium	59	0.50	0.020	mg/L	20	39	101	70-130		
Sodium	210	0.50	0.13	mg/L	20	200	41	70-130		
Potassium	35	0.050	0.010	mg/L	20	16	95	70-130		
Matrix Spike (BH22403-MS2)		Source: 1	1209547-02		Prepared 8	& Analyzed: (08/29/12			
Potassium	23	0.050	0.010	mg/L	20	3.8	97	70-130		
Calcium	25	0.50	0.042	mg/L	20	5.9	97	70-130		
Iron	9.9	0.10	0.020	mg/L	8.0	1.9	100	70-130		
Boron	0.43	0.10	0.050	mg/L	0.40	ND	108	70-130		
Sodium	29	0.50	0.13	mg/L	20	8.5	102	70-130		
Manganese	0.46	0.010	0.0010	mg/L	0.40	0.072	97	70-130		
Magnesium	24	0.50	0.020	mg/L	20	4.5	99	70-130		
Matrix Spike Dup (BH22403-MSD	1)	Source: 1	1209534-01		Prepared 8	& Analyzed: (08/29/12			
Manganese	0.39	0.010	0.0010	mg/L	0.40	0.0016	96	70-130	0.7	30
Magnesium	61	0.50	0.020	mg/L	20	39	110	70-130	3	30
Calcium	75	0.50	0.042	mg/L	20	53	112	70-130	3	30
Potassium	36	0.050	0.010	mg/L	20	16	97	70-130	1	30
Iron	7.8	0.10	0.020	mg/L	8.0	0.023	97	70-130	1	30
Sodium	220	0.50	0.13	mg/L	20	200	84	70-130	4	30
Boron	0.64	0.10	0.050	mg/L	0.40	0.23	101	70-130	0.2	30

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

Metals - Quality Control

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit

Batch BH22403 - Metals Preparation for EPA Method 200.7

Matrix Spike Dup (BH22403-MSD2)		Source: 1	209547-02		Prepared 8	Analyzed: (08/29/12			
Sodium	29	0.50	0.13	mg/L	20	8.5	103	70-130	0.5	30
Manganese	0.45	0.010	0.0010	mg/L	0.40	0.072	93	70-130	3	30
Magnesium	24	0.50	0.020	mg/L	20	4.5	99	70-130	0.04	30
Boron	0.42	0.10	0.050	mg/L	0.40	ND	104	70-130	3	30
Iron	9.8	0.10	0.020	mg/L	8.0	1.9	99	70-130	8.0	30
Calcium	25	0.50	0.042	mg/L	20	5.9	96	70-130	8.0	30
Potassium	23	0.050	0.010	mg/L	20	3.8	98	70-130	0.9	30

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209016

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

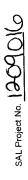
+O Matrix spike source sample was over the reccommended range for the method.

Finder



SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD. OLD SWAR, FL. 34677 813-855-1844 fax 813-855-2218

Client Name	Hazer	Hazen and Sawyer	er							8	Contact / Phone	je:						
Project Name / Location	200	V Tort Coo	0 H						i					i	i			
Samplers: (Signature)	AS AS	Secon lest racility SE#2	IIITY SE#2							-								
13		13							PARAME	TER / CO	PARAMETER / CONTAINER DESCRIPTION	DESCRIP.	NOF					
Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SI-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water	Wastewater dge SO-Soil Nater O-Other					, cop, тР 14, сор, тР					*Os						-	
Sample Description	iption	Date	əmiT	xirtsM	Composite Grab	1KN' NO×' N 120W b' H ⁵ 1	1LP, Cool Cl, Alkalinity	CI, Alkalinity, SO₄	DOC 40mLaV, HCI	TOC TOC	В, Са, Fe, М <u>с</u> 250mL Р, Н ₂ 9 ТКИ, ИОх, И	1LP, Cool		00	Hq	Conductivity	Temperature	No. of Contai per each loca
01 TA4-PZ-11-EF2		082212	21425	ВW	×	-	1							811	2.4 8	184.7 77.8	877	
02 TA4-PZ-10-H5			1056	GW	×	-	1							4./	1.43 4.7	275.122.2	22	
03 TA-PZ-10-J5			1044	GW	×	1	1			_				Z. /#	4 4.3	212 518	71.7	
04 TA4-PZ-10-K5		_	1028	GW	×	+		-	1	2				01.10	0.4.2	72 1.885	17.1	
05 TA4-PZ-11-L2		0823	082314/415	GW	×	1		1	1	2 1				2.3	34.7	62 250	1.6	
06 TA4-PZ-11-L3		212256	52212 0932	GW	×	-	1							70	1.08 4.22494.8	249.0	26.54	
07 TA4-PZ-11-L4		4	0946	GW	×	-		-	1	2 1				11.5	1.564.2	338826.8	26.5	
08 TA4-PZ-11-L5		_	1004	GW	×	-	-							7.5	1.54 4.2 353.9 26.9	353.9	26.9	
09 TA4-PZ-11-L6			1016	GW	×	-	-							1.69	19 4.7	367.7 27.1	17.1	
10 TA4-PZ-09-M4			0753	GW	×						-	1		27	0.556.6522		7.7	
11 TA4-PZ-16-M4			2150	GW	×						1	1		8.	0.72 5.3732.525.8	2.52.5	25.9	
12 TA4-PZ-09-N7			1235	GW	×						_	-		1.29	9.6	5.6 517.277.4	H'Li	
Towns of	9 [9]7	Received:	4	B	Date/Time:	101 401	k 4	s	Seal intact?			× (3					
Relinquished:	Date/Time: 1500	Received			Date/Time:	١,	5	ς, Τ	Samples intact upon arrival?	t upon arriva	2	Ž)	¥ Ž					
Jan Marie	211280	至			38	1.08-80	3,5	~	Received on ice? Temp	e? Temp_	-	g	₹ Ž					
Jeni Idusi Ieu.	Date/ Ime:	Received			Date/Time:			ă:	Proper preservatives indicated?	/atives indic	ated?	S S S	₹					
Relinquished:	Date/Time;	Received:			Date/Time:			ď.	Rec'd within holding time?	olding time?		ON NA	¥ ¥					
Deline in the Ad-	į							<u>,</u>	Volatiles rec'd w/out headspace?	w/out head	space?	₽ >	₽					-
יפון לתופות כיי		Kecelved:			Date/Time:			<u> </u>	Proper containers used?	ers used?		N NA	₹ Ž				120	1209016
Chain of Custody As Rev.Date 11/19/01												Ch	Chain of Custody	χρ				



SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLD SMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name									Contact / Phone:	hone:				İ	
	Hazen a	Hazen and Sawyer													
Project Name / Location															
	S&GW	S&GW Test Facility SE#2	y SE#2												
Samplers: (Signature)								PARAMI	ETER / CONTAIN	PARAMETER / CONTAINER DESCRIPTION	z				
Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water	astewater e SO-Soil ater O-Other												/	ə.	siners (Total
Committee Description	ri,	ətsC	Time	xintsM	Composite Grab	250mL P, H ₂ TKN, NOx, N	11P, Cool Cl					рн	PH Conductivity	Temperatur	No. of Confort
04 DV - VO - VO - VO - VO - VO - VO - VO -		212280	1254		×	-	-					0.405.2		25.326.2	
1		-	02//	Νg	×	-	-					1.14 5.	5.37257	121	
1			17.59	ΝS	×	-	-					0.56 5:1	1 231.	271.4 26.2	
			1,58	ΝĐ	×	-	1					1.82 6.	.2862	6.2562777.6	
_			1217	W.S	×	-	-					0.475.32307264	. 3 230	726.4	
\top			1221	N.	×	-						0.674.7		59.4 27.6	
\neg			0/3	, A	×	-	-					0.24 5.2 226.526.5	2226	526.5	
19 1A4-PZ-10-1-01-4		_	25	NG C	×	-	-					0.855.0270972.5	0220	5.22 6	
20 1A4-FZ-03-1010			1332	NG W	×	_	-					3/50	11236	5.1236.926.3	
Containers Prepared/ Relinquished:	Date/Time: 1938	Received:	H	M.	Date/Time	Date/Time: 1645	7	Seal intact?		× ×	O				
Stading	2/18/13		7	A	08/8/2	الأ		- Samples inta	Samples intact upon arrival?	Z Q					
Refinquished:						,	1500	Received on ice? Temp	ice? Temp	Z Z					
	282272				0 0	6		<u> </u>)					
Relinquished:	Date/Time:	Keceived:			Date/ Ilitie			Proper prese	Proper preservatives indicated?	S N N N					
Relinquished:	Date/Time:	Received:			Date/Time:			Rec'd within holding time? Volatiles rec'd w/out head	Rec'd within holding time? Volatiles rec'd w <i>l</i> out headspace?	§ (§					,
Relinquished:	Date/Time:	Received:	ļ		Date/Time:			Proper containers used?	iners used?	§ Z					1209016
Chain of Custody.xls Rev.Date 11/19/01										Chain	Chain of Custody				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Oli a set Nissera	Hanna and Courses	Locations		Contact:		
Client Name:	Hazen and Sawyer	Location:		Phone:		
Date Sampled	082212	SAL Project #	1209016	Project Name	S&GW Test Facility	/ SE #2
144 H M 15		Camala ID	<u> </u>	GPS LAT		
Well Number	TA4-PZ-11-EF2	Sample ID	O(GPS LONG		
		PI	URGING DATA			
MELL	NA/ELL	Screen		Static Denth	PURGE	

PURGING DATA											
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	9.00	PURGE PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4						EQ Volume, 3, 3 Minutes)		q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =											
ONE WELL VOLUME	0.1	2 3	1/4 WELL VOLUME			3 WELL VOLUMES	0.6°		5 WELL VOLUMES		
EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME											
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1415	PURGE TIME END	1424	TOTAL PURGED	0.90		
INST.	\times	\times	\times	\times	SAL-SAM-63	SAL-SAM - 65- <u>の</u> j	SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1418	0.30	6.30	0.10	9.56	4.2	27.7	188.0	1,52	18.6	CLEAK	NONE
1421	0.30	0.60		1	4.7	27.8	187.8	1.49	18.9	1	
1424	0.30	0.90			4,2	27.8	186.7	1.48	19.4	1	(
	Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88										
TUBII					= 0.0014; 1	/4" = 0.0026;	5/16" = 0.004	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" =	0.016
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016											

SAMPLING DATA

		OAMI LIN	O DAIN		
SAMPLED BY / COMPAN (PRINT)	Y SAL		SAMPLER(S) SIGNATURES:	7	1/
TUBING MATERIAL COL (CIRCLE ONE)	PP PE NP (TL) TT	SAMPLE TUBING LEGNTH IN WELL (FEET)	ş'	SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING 1425	SAMPLING 147G	FIELD Y N	CLEANING STEPS		
FIELD Y N	FILTER SIZE (μm)	DUPLICATE Y	VOC COLLECTED BY REVERSE FLOW?	V NI / NI/A W	COLLECTED Y N N/A
PRESERVATION CHECKED IN FIELD?	I I V / MI NI/A I	ERVATIVES DED			
WEATHER CONDITIONS	Clear, 8	1°		*****	
COMMENTS					
	PUMP CODES: PP=Pe	ristaltic Pump, GP= Submers	sible Grundfos Pump, IBP= I	n-place Bladder Pump	
	UBING MATERIAL CODES: PP=	Polypropylene, PE= Polyeth			etion
Reviewed	By:		<u>Date</u>	:	

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

770	J BAYVIE	EW BOULE			VATER S				B 13-000	-2210	
Client Name:		lazen and Sawye		Location:				Contact:			
Date Sampled		<u>.</u>		SAL Project	120	9016		Phone: Project Name	S&GV	V Test Facility	 SE #2
		TA1.PZ-10.H5		# Sample ID	100	<u>√</u>		GPS LAT			
Well Number		TA4-PZ-10-H5		·	URGING	DATA		GPS LONG			
		115-11	 		UKGING	DATA		Static Depth	1	PURGE	
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	to Water (Feet)	9 1045	PUMP CODE	(PP) GP
TOTAL WELL DEPTH (Feet)	• • •	REFERENCE ELEVATION (NGVD)		ELEV/ (REFEREN	O WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		bmerged Screen (TAL DEPTH - ST				EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME		276	1/4 WELL VOLUME	X 11.22 57	01	3 WELL VOLUMES	0.6	78	5 WELL VOLUMES		
VOCO 1		EQUIPMENT VO		IP VOLUME +	(TUBING CAF						
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBIN IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	1046	PURGE TIME END	1055	TOTAL PURGED	0.90
INST.	\times	\times	\times	\supset	SAL-SAM-63-		SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	>
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1049	0.30	6.30	0.00	9.62	4.3	27.7	236.8	1.68	17.5	CLEAR	NONE
1052	0.30	0.60			4.3	27.3	3 37.2	1.50	17-4		
1055	0.30	0.90			4.3	27.2	235.1	1.43	17.2	_/_	
								<u> </u>			
									1.5		<u> </u>
7.150		Capacity (gallons/ A. CAPACITY (Ga					', 4"=0.65, 5/16" = 0.00	· · · · · · · ·		.010; 5/8" =	0.016
TUBIR	IG INSIDE DI	A. CAPACITY (Ga	31./Ft.): 1/0 -		AMPLIN			4, 3/0 = 0.00	10, 112 -	010, 0.0	0.010
CAMBI ED BY	// COMPANY	T			VIAII FILE		PLER(S)	T	1	3 1	7
SAMPLED BY			<u> SA</u>	<u> </u>			ATURES:		<u> </u>	~~ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	<u>'</u>
	ERIAL CODE E ONE)	PP PE N	PTETT		E TUBING WELL (FEET)				UMP FLOW mL/min)		
SAMPLING INITIATED	1050		1057	FIELD CLEANED		CLEANING STEPS			SI CEMILYOLS	COLLECTED	
FIELD FILTERED?	Y(N)	FILTER SIZE (μm)		DUPLICATE	\perp		LECTED BY SE FLOW?	Y N (N/A		GH TRAP?	Y N(N
	RVATION IN FIELD?	N N/A	AD	SERVATIVES DED							
L.	THER ITIONS	Cle	er, 80) •							
COMI	MENTS										
		PUMP CO	ODES: PP=Pe	eristaltic Pump), GP= Submer	sible Grundfos	S Pump, IBP= I	In-place Bladde	r Pump	'eflon	
	TU Duriound Bu		CODES: PP	= Polypropyler	ie, PE- Polyei	nylene, wr-	Date		Lilica,	0110.1	-

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

			GR	OUNDV	VATER S	SAMPLI	NG LOG	.			
Client Name:	H	lazen and Sawye	r	Location:				Contact: Phone:			
Date Sampled		088218	,	SAL Project #	1209	0)(0		Project Name	S&GV	/ Test Facility	SE #2
Well Number		TA4-PZ-10-J5		Sample ID		n3		GPS LAT GPS LONG			
L.,				Р	URGING			OI O LONG			
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	004	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	9.13	PURGE PUMP CODE	GP IBP
TOTAL WELL DEPTH (Feet)	K4.75	REFERENCE ELEVATION (NGVD)		GROUND ELEV/ (REFERENC	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (TAL DEPTH - ST				EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME		-24	1/4 WELL VOLUME			3 WELL VOLUMES	0.0		5 WELL VOLUMES		
		EQUIPMENT VO		IP VOLUME +	(TUBING CAI		BING LEGNTH	i) + FLOW CEL			
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			T VOLUME		
INITIAL TUBII IN WELL			FINAL TUBII IN WELL			PURGE TIME START	1034	PURGE TIME END	1043	TOTAL PURGED	0.90
INST. ID	VOLUME TOTAL			\times	SAL-SAM-63-	SAL-SAM - 65- <u>0/</u>	SAL-SAM-63	SAL-SAM-55- 02	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1037	0.30	0.30	0.10	9.59	4.4	27.4	384.5	2.40	13.9	CLEAR	NONE
1040	0.30	0.60			4.4	27.3	382.9	2.24	12.9		
1043	0.30	0.90			4.3	27.2	381.5	2.14	12-CL	_/_	1
	Well C	apacity (gallons/i	foot): 0.75"=0	02, 1.25"=().06. 2"=0.1	 6, 3"=0.37	. 4"=0.65.	5"=1.02, 6	<u> </u> 3"=1.47, 12"	 5.88	
TUBIN		A. CAPACITY (Ga			,	/4" = 0.0026;	5/16" = 0.00		6; 1/2" = 0.	010; 5/8" =	0.016
				S	AMPLIN	G DATA	1				
SAMPLED BY (PRI			SAL				PLER(S) ATURES:		4.	y	
TUBING MAT (CIRCL		PP PE NI	т 🕜 ч		TUBING WELL (FEET)				JMP FLOW mL/min)		
SAMPLING INITIATED	1044	SAMPLING ENDED	1045	FIELD CLEANED	Y (₹)	CLEANING STEPS			Logue voc	001150755	
FIELD FILTERED?	Y(N)	FILTER SIZE (μm)		DUPLICATE	Y (N)	-	LECTED BY SE FLOW?	Y N (N/A)		COLLECTED GH TRAP?	Y N WA
	IN FIELD?	Y N N/A	1	ERVATIVES DED							
	THER ITIONS	Clea	~,80								
COMI	MENTS		250 25 5		OD- 0-1	aible Curade-	Dumo IDD-	n njace Bladde	r Pumn		
	TU	PUMP CO BING MATERIAL	DDES: PP=Pe	ristaltic Pump Polypropylen	, GP= Submer e, PE= Polyet	sible Grunatos hylene, NP= l	Non-inert Plas	n-place Bladde tic, TL= Teflon	Lined, TT= To	efion	
R	eviewed By						Date	9:			

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

		0	***************************************		
0: 111	Harris and Course	Lagatian		Contact:	
Client Name:	Hazen and Sawyer	Location:		Phone:	
Date Sampled	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
	TA 4 D7 40 K5	Commis ID	വ	GPS LAT	
Well Number	TA4-PZ-10-K5	Sample ID	01	GPS LONG	

PURGING DATA

				P1	URGING	DAIA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	9.15	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	14.75	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (ged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	n (1 Well, 3,3	minutes)
WELL V	OLUME = (TO	TAL DEPTH - ST	ATIC DEPTH)	X WELL CAPI	CITY =						
ONE WELL VOLUME	0.2	24	1/4 WELL VOLUME			3 WELL VOLUMES		e72	5 WELL VOLUMES		
		EQUIPMENT VO	DLUME = PUM	P VOLUME +	(TUBING CAF	PACITY X TUE	SING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME		!	EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL			FINAL TUBIN			PURGE TIME START	1019	PURGE TIME END	1028	TOTAL PURGED	0.90
INST.	\times	\times	\times	\times	SAL-SAM-63-	SAL-SAM - 65- <u>©(</u>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0_/	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (∆ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1022	0.30	0.30	0.10	9.58	4.2	27.1	390.2	1.81	19.8	CLEAR	IVONE
1025	0.36	0.60	1	1	4.2	27.1	389.6	1.7Ce	18.0		
1028	0.30	0.90	1		4.2	27.1	388.7	1.70	18-2	1	
	\Mell (L Capacity (gallons/	foot): 0.75"=0	02. 1.25"=(0.06. 2"=0.1	16. 3"=0.37	4"=0.65,	5"=1.02, 6	5"=1.47, 12	"5.88	
TUBI		A. CAPACITY (Ga				,	5/16" = 0.00	4: 3/8" = 0.00	06; 1/2" = 0.	010; 5/8" =	0.016
10811	AG HASIDE DI	n. UNFAUITT (G	and 1.7. 170 -	5.5555, 5/10	- 0.0014, 1						

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT) TUBING MATERIAL CODE SAMPLE TUBING SAMPLE TUBING SAMPLE TUBING SAMPLE PUMP FLOW	
CAMPLE PLANE	
TUBING MATERIAL CODE PP PE NP TT TT SAMPLE TUBING (CIRCLE ONE) PP PE NP TT TT LEGNTH IN WELL (FEET) SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING 1029 SAMPLING 1030 FIELD Y CD CLEANING STEPS	
FIELD FILTER SIZE DUPLICATE Y VOC COLLECTED BY REVERSE FLOW? Y N N/A SEMI-VOLS COLLECTED Y THROUGH TRAP?	N (A)
PRESERVATION CHECKED IN FIELD? N N/A LIST PRESERVATIVES ADDED	
WEATHER CONDITIONS Clear, 79°	
COMMENTS	
PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump	
TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon	
Reviewed By: Date:	

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

		GROUND	VAILN SAIVIPLING	LOG	
Client Name:	Hazen and Sawyer	Location:		Contact:	
Client Name.	nazeri and Sawyer	I		Phone:	
Date Sampled	082212	SAL Project #	1709016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-11-L3		010	GPS LAT	
vveii Number	1A4-P2-11-L3		06	GPS LONG	
		P	URGING DATA		
WELL	WELL	Screen		Static Depth	PURGE (P)

				P	URGING	DATA							
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	9.15	PURGE PUMP CODE	GP IBP		
TOTAL WELL DEPTH (Feet)	14.75	REFERENCE ELEVATION (NGVD)	:	GROUND ELEVA (REFERENC	TION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)			
						EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)		
ONE WELL VOLUME		Z4	1/4 WELL VOLUME			3 WELL VOLUMES			5 WELL VOLUMES				
		EQUIPMENT VO	DLUME = PUM	P VOLUME +	(TUBING CAI	PACITY X TUE	SING LEGNTH) + FLOW CEL	L VOLUME				
INVACIL (SEET) INVACIL (SEET) INME 10016 SND 1021 BURGED 150													
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)													
	\times	>	\times	\times				L .		\times	\times		
TIME	PURGED	VOLUME PURGED		Water	(SU)	(oC)	(uS/cm)	(mg/L)	(NTUs)		1		
0919	0.30	6.30	0.10	10.02	4.3	26.7	241.0	1.59	178	CLOUDY	NONE		
0922	0.30	0.60		1	4.3	26.7	240.7	1.35	50.4				
0925	0.70	0.90			4.3	26.8	240.3	1.20	19.9				
0978	0.30	1.20			4.3	26.8	243.9	1.10	8.6≥	CLEAR			
0831 0.30 1.50 4.2 26.8 249.0 1.08 4.90													
	Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88												
TUBIN	IG INSIDE DIA	. CAPACITY (Ga	l./Ft.): 1/8" =	0.0006; 3/16"	= 0.0014; 1	/4" = 0.0026 ;	5/16" = 0.004	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" =	0.016		

SAMPLING DATA

				0,		O DAIA	·					
SAMPLED BY (PRII			SAL	_		SAMPI SIGNA			SE	6		
TUBING MATE (CIRCLE		PP PE NF	T	SAMPLE LEGNTH IN V				SAMPLE PU RATE (n				
SAMPLING INITIATED	0832	SAMPLING ENDED	0833	FIELD CLEANED	Y (N)	CLEANING STEPS						
FIELD FILTERED?	Y 🚱	FILTER SIZE (μm)		DUPLICATE	Y @	VOC COLL REVERS		Y N (N/A)		COLLECTED SH TRAP?	YNO	N/A
PRESER' CHECKED		Ø N N/A		ERVATIVES DED								
WEAT CONDI		clear,	77'									
СОММ	ENTS											
		PUMP CO	DES: PP=Pe	ristaltic Pump,	GP= Submers	ible Grundfos	Pump, IBP= In	-place Bladder	Pump			
	TUE	ING MATERIAL	CODES: PP=	Polypropylene	PE= Polyeth	ylene, NP= N			ined, TT= Te	eflon		
Re	eviewed By:						Date:					

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

11	UBAYVII	EW BOULE			VATER S				813-85	5-2216	
Client Name:	ŀ	lazen and Sawye		Location:				Contact:			40
Date Sampled		5 62 2 12		SAL Project	1200	1016		Phone: Project Name	S&GV	V Test Facility	SE #2
Well Number		582212 TA4-PZ-11-L4		#	10)	15.10		GPS LAT			
				P	URGING	DATA		GPS LONG			
WELL DIAMETER (Inches)	55 0 /.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	9.10	PURGE PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)	14.78	REFERENCE ELEVATION (NGVD)		GROUNE ELEV/ (REFEREN	ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (TAL DEPTH - ST			rged Screen (1	EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	0.2	27	1/4 WELL VOLUME			3 WELL VOLUMES	0.6		5 WELL VOLUMES		
PUMP VOLUME		EQUIPMENT VO	TUBING LEGNTH	IP VOLUME +	(TUBING CA	FLOW CELL VOLUME	BING LEGNTH	i) + FLOW CEL	EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	0936	PURGE TIME END	0845	TOTAL PURGED	0.90
INST. ID	\times	\times	\times	\times	SAL-SAM-63-	SAL-SAM - 65- <u>©/</u>	SAL-SAM-63	SAL-SAM-55- <u>O2</u>	SAL-SAM-	\times	>
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0939	0.30	0.30	0.10	9.80	4.2	24.8	330.7	1.80	10.4	CLEMA	NONE
0842	6.30	0.60			4.2	26.8	235.2	1.72	9.78		
0845	0.30	0.90			4.2	26.8	338.5	1.56	6.72		
TUDU		Capacity (gallons/i					, 4"=0.65, 5/16" = 0.00	,		"5.88 010: 5/8" =	0.016
1081	NG INSIDE DIA	A. CAPACITY (Ga	ii./Ft.): 1/6 =		AMPLIN			4, 3/8 - 0.00	1/2 - 0.	010, 3/0 -	0.010
	// COMPANY INT)	(AL			SAMF	PLER(S) ATURES:		2	1/	
TUBING MAT	ERIAL CODE E ONE)	PP PE NI	· (Î)п		E TUBING WELL (FEET)			SAMPLE P	UMP FLOW mL/min)		
SAMPLING INITIATED	0946	SAMPLING ENDED FILTER SIZE	0847	FIELD CLEANED	Y 60	CLEANING STEPS	LECTED BY		TSEMI-VOLS	COLLECTED	
	RVATION	(μm) (Y) N N/A		DUPLICATE SERVATIVES DED	YN		SE FLOW?	Y N NÃ		GH TRAP?	Y N (N/)
WEA	THER	Clear	I								
СОМ	MENTS										
		PUMP CO	DES: PP=Pe	eristaltic Pump	GP= Submers	sible Grundfos	Pump, IBP= I	in-place Bladde	r Pump	eflon	
	IUI		CODES. FP-	- i olypropylen	c, re-roiye	,	Date				

Reviewed By:

11	O BAYVIE	EW BOULE	-		•		3-855-16 ING LOG		813-855	5-2218	
Client Name:		lazen and Sawye		Location:				Contact:			
Cilent Name.		azen ano oawye		SAL Project				Phone:			
Date Sampled	08	2212		#	1209	016		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA4-PZ-11-L5			C	>8		GPS LAT GPS LONG			
				P	URGING	DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	9.14	PURGE PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENCE)	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL	OLUME = (TO	TAL DEPTH - ST	1/4 WELL	X WELL CAPI	CITY =	3 WELL	l .		5 WELL		
VOLUME	0.22.	4	VOLUME			VOLUMES	0.0		VOLUMES		
		EQUIPMENT VO	DLUME = PUM	P VOLUME +	(TUBING CAF		BING LEGNTH) + FLOW CEL			
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			T VOLUME		
INITIAL TUBI IN WELL			FINAL TUBIN			PURGE TIME START	0954	PURGE TIME END	1003	TOTAL PURGED	0.90
INST. ID	\times	><	\times	\times	SAL-SAM-63-	SAL-SAM - 65- <i>O/</i>	SAL-SAM-63	SAL-SAM-55- 02	SAL-SAM-	\times	$>\!\!<$
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0957	0.30	0.30	0.10	9.52	4.2	26.9	T	1.62	18.0	CLEAR	NONS
1000	0.30	0.60			4.2			1.57	17.9		
1003	0.30	0.90		1	4.2	26.9	388.8	1.54	17.G		
	Well (Capacity (gallons/f	oot): 0.75"=0	02, 1.25"=0).06, 2"=0.1	6, 3"=0.37	. 4"=0.65.	5"=1.02, 6	<u> </u> :"=1.47, 12	T5.88	
TUBI		A. CAPACITY (Ga									0.016
				S	AMPLIN	G DATA	1				
	// COMPANY		SAL				PLER(S) ATURES:			- 0	
	ERIAL CODE E ONE)	PP PE NI	->	SAMPLE	TUBING WELL (FEET)		TURES.	SAMPLE PI RATE (I			
SAMPLING INITIATED	1004	SAMPLING ENDED	1005	FIELD CLEANED	Y®	CLEANING STEPS		`		<u> </u>	
FIELD FILTERED?	Y	FILTER SIZE (μm)		DUPLICATE	YN		LECTED BY SE FLOW?	Y N (MA)		COLLECTED GH TRAP?	Y N(N
	RVATION IN FIELD?	Ø N N/A	AD	ERVATIVES DED							
	THER ITIONS	Clear	,78°								
COM	MENTS		·							-	
		PUMP CO BING MATERIAL	DES: PP=Pe	ristaltic Pump,	GP= Submers	sible Grundfos	Pump, IBP= I	n-place Bladder	Pump	efion	
	TUI eviewed Rv		CODES: PP=	rolypropylen	e, re-roiyet	nyiche, NE-1	Date				

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

		=W BOULE			VATER				3.5.5.5		
Client Name:	ŀ	lazen and Sawye	r	Location:				Contact: Phone:			
ate Sampled		082217	L	SAL Project	1200	1016		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA4-PZ-11-L6		#	1,00	<u> </u>		GPS LAT			
				D	URGING	<u> </u>		GPS LONG			
WELL		WELL		Screen	ONGINE	DAIA		Static Depth		PURGE	€ GP
DIAMETER (Inches)	1.0	CAPACITY (gal/ft)	0.04	Interval (Feet)	UNK	То	UNK	to Water (Feet)	9.14	PUMP CODE	BP GP
TOTAL WELL DEPTH (Feet)	14.15	REFERENCE ELEVATION (NGVD)		ELEV	O WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	hnique: q Sul	omerged Screen	(1,1/4,1/4 Well) q Subme	rged Screen (1	EQ Volume, 3	, 3 Minutes)	, ,	merged Scree		minutes)
	OLUME = (TO	TAL DEPTH - ST	ATIC DEPTH) 1/4 WELL	x WELL CAPI	ICITY =	3 WELL	<u> </u>		5 WELL		
ONE WELL VOLUME	0.7	EQUIPMENT VO	VOLUME	4D VOLUME	CTUDING CAL	VOLUMES	O.G		VOLUMES		
		EQUIPMENT VO	1	AP VOLUME +	(TUBING CA		SING LEGINITI) + FLOW CEL			
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	1006	PURGE TIME END	1015	TOTAL PURGED	0.90
INST. ID	\times	> <	\geq	\geq	SAL-SAM-63-	SAL-SAM - 65- <u></u>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0	\times	\geq
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1009	0.30	0.30	0.16	9.46	4.3	27.1	365.4	1.70	19.0	CLEAR	NONE
1012	0.30	0.60	/		4.3	27.1	366.0	1,68	18.8		
1015	0.30	0.90	1		4.3	27.1	361.7	1.69	18-8	<u> </u>	
78											
TUDI		Capacity (gallons/ A. CAPACITY (Ga				·	, 4"=0.65, 5/16" = 0.00			"5.88 010; 5/8" =	0.016
TOBIL	NG INSIDE DI	A. CAPACITY (G	al./Ft.): 1/0 =		AMPLIN			4, 3/6 - 0.00	0, 172 - 0.	010, 070 -	0.010
SAMDI ED BY	Y / COMPANY	T			AIVII LIIN	· ·	PLER(S)			4-	1
	INT)		SAC				TURES:			C^{-1}	- 57
	TERIAL CODE LE ONE)	PP PE N	P (TL)TT		E TUBING WELL (FEET)			SAMPLE PI RATE (r			
SAMPLING INITIATED	O FIOI (SAMPLING ENDED	1017	FIELD CLEANED	Y (N)	CLEANING STEPS					
FIELD FILTERED?	¥ ® 2	FILTER SIZE (μm)		DUPLICATE	Y 60		LECTED BY SE FLOW?	Y N (N/A)		COLLECTED GH TRAP?	YNW
	RVATION IN FIELD?	ƴ N N/A		SERVATIVES DED							
	THER ITIONS	Clear	.78	v							
СОМ	MENTS										
		PUMP CO	DDES: PP=Pe	eristaltic Pump	, GP= Submer	sible Grundfos	Pump, iBP= 1	n-place Bladde	Pump		
		BING MATERIAL	CODES: PP	= Polypropylen	e, PE= Polyet	hylene, NP=	Non-inert Plast	ic, TL= Teflon	Lined, TT= To	eflon	
n	ovioused By						Date	Y I			

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

		EVV BUULE					NG LOG			, , _	
Client Name:	Н	azen and Sawye	,	Location:				Contact:			
Data Carralad		C/ > A +		SAL Project	1000	201/ -		Phone: Project Name	SAGV	V Test Facility	SF #2
Date Sampled		8221	2	#	1200	<u> 1016</u>	,	GPS LAT	3001	v rest racility	JE #2
Well Number		TA4-PZ-09-M4			1	0		GPS LONG			
				Р	URGING	DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	5.44	PURGE PUMP CODE	PP GP
TOTAL WELL	9.55	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	ATION	- 112		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		merged Screen (1,1/4,1/4 Well		ged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	,	minutes)
WELL V	OLUME = (TO	TAL DEPTH - ST.	ATIC DEPTH)				1				
ONE WELL VOLUME	0.10	EQUIPMENT VO	1/4 WELL VOLUME	MP VOLUME +	(TUBING CA	3 WELL VOLUMES PACITY X TUI	O. 50		5 WELL VOLUMES L VOLUME		
PUMP VOLUME		Egon Men	TUBING LEGNTH		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII				NG LEGNTH L (FEET)		PURGE TIME START	0837	PURGE TIME END	0852	TOTAL PURGED	1.50
INST. ID	\times	> <	\times	\times	SAL-SAM-63	SAL-SAM - 65-0/	SAL-SAM-63	SAL-SAM-55- <u>0</u> -2	SAL-SAM- 0	\geq	\geq
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe
0810	0.36	0.30	0.10	5.85	6-2	76.le	700	1.91	MAX	BROWN	NONE
0843	0.30	0.60	1	<u> </u>	6.5	26.7	638	0.67	235	CLOUDY	
0846	0.30	0.90			6.5	76.7	610	0.28	32.8		1-
0849	0.30	1.70			6.6	26.7	544	0.54	36.7		1
0852	6.30	1.50	3 275" 2	22 1 25"	(o · (a	26.7	527	5"=1.02, 6	"=1.47, 12	"5.88	
TURIN		apacity (gallons/f					5/16" = 0.00				0.016
10011	10 1110102 011	0/11/10/11/ (00			AMPLIN				· · · · · · · · · · · · · · · · · · ·		
	(/ COMPANY INT)	,	SAL			SAME	PLER(S) ATURES:		1	i -1	
TUBING MAT	ERIAL CODE E ONE)		Р 🗇 П	J	E TUBING WELL (FEET)				JMP FLOW nL/min)		
SAMPLING INITIATED	0853	SAMPLING ENDED	0854	FIELD CLEANED	Y (N)	CLEANING STEPS					
FIELD FILTERED?	Y (₽)	FILTER SIZE (μm)		DUPLICATE	YW		LECTED BY SE FLOW?	Y N (NA)		COLLECTED GH TRAP?	YNQ
	RVATION IN FIELD?	Ø n n/a	AD	SERVATIVES DED							
	THER ITIONS	Clou	dy, s	75°							

Revision Date 09/25/09

Reviewed By:

COMMENTS

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump
TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

11	O BAYVIE	EW BOULE	•		R, FL 34 VATER S				B1 3-85t	5-2218	
Client Name:	н	azen and Sawye		Location:				Contact:			
				SAL Project	10.00			Phone:			05 "0
Date Sampled	08	2212		#	1200	1016		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA4-PZ-16-M4				11		GPS LAT			
				Р	URGING	DATA					
WELL DIAMETER (inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	6.34	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	17.25	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENCE)	ATION	<u>*************************************</u>		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	hnique: q Sub	merged Screen (1,1/4,1/4 Well	g Submer	ged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL	OLUME = (TO	TAL DEPTH - ST	1/4 WELL	x WELL CAPI	CITY =	3 WELL			5 WELL		
VOLUME			VOLUME			VOLUMES			VOLUMES		
		EQUIPMENT VO	DLUME = PUN	P VOLUME +	(TUBING CAF	PACITY X TUE	BING LEGNTH) + FLOW CEL	VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL			FINAL TUBII IN WELL	NG LEGNTH _ (FEET)		PURGE TIME START	085Ce	PURGE TIME END	09//	TOTAL PURGED	3.00
INST. ID	\times	> <	\times	\times	SAL-SAM-63 <u>ಲ</u> /	SAL-SAM -	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0_/	\times	\geq
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0859	0.60	0,60	0.20	6.55	Ce-3	74.4	258.5	1.36	141	CLOUDY	NONE
0902	0.60	1.20			5.5	24.0		U-49	88.7	 	
0905	0360	1.80			5.4	25.9	234.6		35.5	1	
0908	0.60	2.40			5.3	25.9		0.33	· · ·	CLEAR	
A11	0.60	3.00	(00 4.05%	5-3	25.8 6. 3"=0.37			/ ሬ. ዓ "=1.47, 12	."5.88	1
TURI		apacity (gallons/l						4; 3/8" = 0.00			0.016
1000	to intoide di	67 7 . 61 . 7 . 60			AMPLIN			· · · · · · · · · · · · · · · · · · ·			
SAMPLED BY	// COMPANY						LER(S)		>/	2/	1
(PR			SAL			SIGNA	TURES:				<u></u>
	ERIAL CODE E ONE)	PP PE N	р Фπ		E TUBING WELL (FEET)				JMP FLOW mL/min)		
SAMPLING INITIATED	0912	SAMPLING ENDED	09/3	FIELD CLEANED	YN	CLEANING STEPS	<u> </u>		Logue, roug	A COLL FORES	
FIELD FILTERED?	YN	FILTER SIZE (µm)		DUPLICATE	Y(N)		LECTED BY SE FLOW?	Y N (N/A)		GOLLECTED GH TRAP?	YNN
PRESER	RVATION IN FIELD?	N N/A		ERVATIVES DED							
	THER ITIONS	dear	. 75°								
СОМ	MENTS						D 100	Diagram and a second	- Duma	- 10 v	
	7111	PUMP CO BING MATERIAL	ODES: PP=Pe	Polypropyles	GP= Submer	sible Grundfos hviene NP= I	Non-inert Plast	n-place Bladde tic. TL= Teflon	Lined. TT= T	eflon	
	1UI ovioused By		CODES. PP-	- crypropyren	c, re-roiyet		Date				

Reviewed By:

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 B13-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	082712	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Martin Minnelland	TA 4 DZ 00 NZ		13 -	GPS LAT	
Well Number	TA4-PZ-09-N7		12	GPS LONG	

PURGING DATA

					UKGING	DAIA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	5.47	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	TION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen				EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
WELLV	OLUME = (TO	TAL DEPTH - ST.	ATIC DEPTH)	x WELL CAPI	CITY =				,		
ONE WELL VOLUME	0.1		1/4 WELL VOLUME			3 WELL VOLUMES	0.52		5 WELL VOLUMES		
		EQUIPMENT VO	DLUME = PUN	IP VOLUME +	(TUBING CAI	PACITY X TUE	SING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL			FINAL TUBII IN WELL			PURGE TIME START	1219	PURGE TIME END	1234	TOTAL PURGED	1.50
INST.	\times	\times	\times	\times	SAL-SAM-63-	SAL-SAM - 65- <u>0</u> /	SAL-SAM-63	SAL-SAM-55- <u>0</u> Z	SAL-SAM- 0_/	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1222	0,30	0.30	0.10	5,90	5.5	27.4	346.8	152	MAX	BROWN	NONE
1225	0.30	0.60		٨	5.4	27.4	332.Ce	1.43	MAX	1	1
1228	0.30	0.90			5.5	27.4	329.8	1-38	MAX		
1231	0.30	1.20			5.6	27.4	370.4	1.30	Mex		
1234	0.30	1.50			5.6	27.4	317.2	1.29	MAX	1	
	Well C	Capacity (gallons/					<u> </u>			5.88	
TUBII	NG INSIDE DIA	A. CAPACITY (Ga	al./Ft.): 1/8" =	0.0006; 3/16"	= 0.0014; 1	/4" = 0.0026;	5/16" = 0.004	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" = 0	0.016

SAMPLING DATA

												
SAMPLED BY (PRII		S	AL			SAMPI SIGNA	` '		1	- I		
TUBING MATE (CIRCLE		PP PE NF		SAMPLE LEGNTH IN V				SÄMPLE PU RATE (m				
SAMPLING INITIATED	1235	SAMPLING ENDED	1236	FIELD CLEANED	Y 🚱	CLEANING STEPS						
FIELD FILTERED?	RED? Y (N) (L			DUPLICATE	Y 🕖		ECTED BY E FLOW?	Y N (N/A)		COLLECTED SH TRAP?	Y N	€
4		⊘ N N/A		ERVATIVES DED								
WEAT CONDI		clear	, 8r									
СОММ	ENTS											
		PUMP CO	DES: PP=Pe	ristaltic Pump, (GP= Submers	ible Grundfos	Pump, IBP= Ir	n-place Bladder	Pump			
	TUB	ING MATERIAL (CODES: PP=	Polypropylene,	, PE= Polyetl	nylene, NP= N	on-inert Plasti	ic, TL= Teflon L	ined, TT= Te	eflon		
Re	viewed By:						Date	:				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

, ,	OBATVIE			, OLDSMA G ROUNDV					0 1 3 - 03.	J-EE 10	
Client Name:	Н	azen and Sawye	er	Location:				Contact: Phone:			
Date Sampled	৽৪	1717		SAL Project	1200	1016		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA4-PZ-16-N7		"	1	3		GPS LAT			
				P	URGING	DATA		GI S LONG			
WELL DIAMETER (Inches)	10	WELL CAPACITY (gal/ft)	\$0.0	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	5.48	PURGE PUMP CODE	PP GF
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		ELEV	O WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
				/ell) q Subme 'H) x WELL CAP		EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	0.4	72	1/4 WELL			3 WELL VOLUMES	1.41	, ELOM(051	5 WELL VOLUMES		
PUMP VOLUME		EQUIPMENT V	TUBING LEGNTH		· (TUBING CAI	FLOW CELL VOLUME	BING LEGNTH) + FLOW CEL	EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL				IBING LEGNTH ELL (FEET)		PURGE TIME START	1238	PURGE TIME END	1253	TOTAL PURGED	7.00
INST. ID	\times	> <	\times	\supset	SAL-SAM-63	SAL-SAM - 65- <i>O</i> /	SAL-SAM-63	SAL-SAM-55- 0_Z	SAL-SAM- 0_/	\times	>
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpi	I WATER	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe
1241	0,66	0.60	0.20	5.85	5.1	76.3	767.7 52.6	0.86	740	BROWN	NONE
1244	6.60	1.20	1	1 1	5.1	2Ce. 2	260.8	0.72	556		1
1247	0.60	1.80			5.2	26.2	259.8	0.50	432		
1250	0.60	2.40		·	5.2	26.2	255.4	0.42	339		
1253	0.60				5.2	76.2				1 1	
TUBI		apacity (gallons/		=0.02, 1.25"= " = 0.0006; 3/16			5/16" = 0.004		· · · · · · · · · · · · · · · · · · ·	"5.88 010; 5/8" =	0.016
		· · · · · · · · · · · · · · · · · · ·			AMPLIN		1				
	(/ COMPANY INT)	S	AL				PLER(S) ATURES:	ير_	\	1	
-	ERIAL CODE E ONE)	PP PE N	р 🕦 π	SAMPL LEGNTH IN	E TUBING WELL (FEET)				UMP FLOW mL/min)		
SAMPLING INITIATED FIELD	1254	SAMPLING ENDED FILTER SIZE	125		√ ⊕	CLEANING STEPS VOC COL	LECTED BY		TSEMI-VOLS	COLLECTED	Y N(N
FILTERED? PRESEI	Y (N) RVATION IN FIELD?	(μm) N N/A		DUPLICATE ESERVATIVES ADDED	Y (N)		SE FLOW?	YN	THROU	GH TRAP?	T N CN
WEA	THER ITIONS	Clear	,82	•							
СОМІ	MENTS										
	THE	PUMP C	ODES: PP=	Peristaltic Pump	, GP= Submer le, PE= Polvet	sible Grundfos	s Pump, IBP= I Non-inert Plast	n-place Bladde ic, TL= Teflon	r Pump Lined, TT= To	eflon	
	ovioused By			. 5.7 - 5 - 7 - 5	. =/-		Date				

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

		=VV BOOLE					NG LO				
Client Name:	н	lazen and Sawye	r	Location:				Contact: Phone:			
Date Sampled		082212		SAL Project #	1200	1016		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA4-PZ-09-17			Įl.	4		GPS LAT			
				Р	URGING	DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	5.92	PURGE PUMP CODE	⊕ GP IBP
TOTAL WELL DEPTH (Feet)	9,85	REFERENCE ELEVATION (NGVD)		(REFEREN	ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tecl	nnique: q Sub	omerged Screen (TAL DEPTH - ST	1,1/4,1/4 Well) q Submer	rged Screen (1	EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	O-1°	71	1/4 WELL VOLUME			3 WELL VOLUMES	0.57		5 WELL VOLUMES		
		EQUIPMENT VO	DLUME = PUM	IP VOLUME +	(TUBING CAI	PACITY X TUI	BING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	1104	PURGE TIME END	1119	TOTAL PURGED	1.50
INST. ID	\times	> <	\times	\times	SAL-SAM-63-	SAL-SAM - 65- <u>0</u>)	SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1107	0.30	0.30	0.10	5.65	5.3	27.4	372.4	2.74	MAX	BROWN	NONE
1110	0.30	0.60			5.3	27.4	350.7	2.24	MAX		1
1113	0.30	0.90			5.3	27.3	338.2	1.80	MAX		
1116	6.50	1.20			5.3	27.2	330.9	1.50	MAX		
1119	0.30	1,50	/		5.3	27.7	32 5.7	1.14	MAX	15.00	
TUBIN		apacity (gallons/f					, 4"=0.65, 5/16" = 0.004			.010; 5/8" = 0	0.016
			<u></u>	S	AMPLIN	G DATA	$\overline{}$				
	/ COMPANY		SAL				PLER(S) ATURES:		1	~//	
(PRI TUBING MAT (CIRCL	ERIAL CODE	PP PE NI		SAMPLE	TUBING		TURES.	SAMPLE PI RATE (i		<u> </u>	
SAMPLING	1120	SAMPLING	1121	FIELD	Y (b)	CLEANING STEPS		1 ,,,,,,		<u> </u>	
INITIATED FIELD FILTERED?	Y ®	ENDED FILTER SIZE (µm)	,, ,	DUPLICATE		VOC COL	LECTED BY SE FLOW?	Y N NÃ		COLLECTED GH TRAP?	Y N N/A
	VATION IN FIELD?	⊘ N N/A		ERVATIVES DED							
	THER TIONS	dear	_~ , 80°								
COMN	MENTS					-					
	TÜE	PUMP CO	DES: PP=Pe	ristaltic Pump Polypropylen	GP= Submers e, PE= Polyet	sible Grundfos hylene, NP= I	Pump, IBP= I	n-place Bladder ic, TL= Teflon	Pump Lined, TT= Te	eflon	

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

		GROUNDA	VATER SAMPLING	LOG	
Office at Name of	Harris and Courses	I		Contact:	
Client Name:	Hazen and Sawyer	Location:		Phone:	
Date Sampled	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
	TA 4 D7 40 17		10-	GPS LAT	
Well Number	TA4-PZ-16-I7		19	GPS LONG	
		P	URGING DATA		
WELL	WELL	Screen		Static Depth	PURGE (PP) GP

				P	UKGING	DAIA							
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	5.90	PURGE PUMP CODE	€P GP IBP		
TOTAL WELL DEPTH (Feet)	17-27	REFERENCE ELEVATION (NGVD)		ELEVA	ATION		:	TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)			
						EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)		
	OLUME = (TO	TAL DEPTH - ST		x WELL CAPI	CITY =								
DEPTH (Feet) 17.27 ELEVATION (NGVD) ELEVATION (REFERNCE-STATIC) DIAMETER (Inches) Gal/ft) Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes) WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY = 3 WELL VOLUME 1/4 WELL VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME VOLUME EQUIPMENT VOLUME EQUIPMENT VOLUME VOLU													
		EQUIPMENT VO	DLUME = PUM	IP VOLUME +	(TUBING CA	PACITY X TUE	BING LEGNTH) + FLOW CEL	L VOLUME				
Code Code													
DIAMETER 1.0 CAPACITY Interval UNK To UNK to Water 5.5 C CODE CO													
	DIAMETER (Inches) CAPACITY (gal7it) Interval (Feet) CAPACITY (gal7it) (Feet) CAPACITY (gal7it) (Feet) CAPACITY (gal7it) (Feet) CAPACITY (Gal7it) (Feet) CAPACITY (Gal7it) (Feet) CAPACITY (Gal7it) (Gal7i							\times					
TOTAL WELL T.2.7 REFERENCE GROUND WATER LEVATION GREENCE LEVATION CREFERENCE LEVATION CREFERENCE LEVATION CREFERENCE LEVATION CREFERENCE LEVATION CREFERENCE CAPACITY CREFIN CREFERENCE CREENCE CR													
Code Code													
TOTAL WELL 7-27 REFERENCE GROUND WATER LEVATION CAPACITY COLUME TOTAL WELL OLUME TOTAL DEPTH - STATIC DEPTH) FINAL TUBING LEGNTH IN WELL (FEET) TOTAL VOLUME FUNDER CAPACITY TUBING LEGNTH IN WELL (FEET) TOTAL DEPTH - STATIC DEPTH NOULME TOTAL DEPTH - STATIC DEPTH NOULME TUBING LEGNTH IN WELL (FEET) TOTAL DEPTH - STATIC DEPTH NOULME TUBING LEGNTH IN WELL (FEET) TOTAL DEPTH - STATIC DEPTH NOULME TUBING LEGNTH IN WELL (FEET) TOTAL DEPTH NOULME TUBING LEGNTH IN WELL (FEET) TOTAL DEPTH NOULME TUBING LEGNTH IN WELL (FEET) TOTAL DEPTH NOULME NOULME NO													
DEPTH (Feet) 7-27 (NGVD) (REFERENCE-STATIC) (Inches) (gal/ft)													
1135	0.60	2.40			5.1	26.2	232.9	0.54	874				
1138					<u> </u>						1		
						-,	<u> </u>						
TUBI	NG INSIDE DI	A. CAPACITY (Ga	al./Ft.): 1/8" =	0.0006; 3/16	= 0.0014; 1	/4" = 0.0026;	5/16" = 0.00	4; 3/8" = 0.00	1/2" = 0.	010; 5/8" =	0.016		

SAMPLING DATA

		SAMPLIN	G DATA		
SAMPLED BY / COMPANY (PRINT)	SAL		SAMPLER(S) SIGNATURES:	7	
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TT	SAMPLE TUBING LEGNTH IN WELL (FEET)		SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING 1139	SAMPLING ENDED 1140	FIELD Y N	0,2,0		
FIELD Y (A)	FILTER SIZE (μm)	DUPLICATE Y N	VOC COLLECTED BY REVERSE FLOW?		GH TRAP?
PRESERVATION CHECKED IN FIELD?	LCV AND NI/A	ERVATIVES DED			
WEATHER CONDITIONS	Clean, 80°	•			
COMMENTS					
	PUMP CODES: PP=Pe BING MATERIAL CODES: PP=	ristaltic Pump, GP= Submers	sible Grundfos Pump, IBP= In	n-place Bladder Pump	eflon
Reviewed By		Polypropylene, PE= Polyeti	Date		
Neviewed by					

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

71.71	UBAYVIE	EW BOULE			NATER S				313-000	<i>5-22</i> 10	
Client Name:	F	Hazen and Sawyer	I	Location:				Contact: Phone:			
Date Sampled		182212		SAL Project	1209	1016		Project Name	S&GV	N Test Facility S	SE #2
Well Number	0	TA4-PZ-09-L8			1,	6		GPS LAT			
				P	URGING			GFS LUNG			
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	5.61	PURGE PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	D WATER 'ATION ICE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	chnique: q Sur	bmerged Screen (TAL DEPTH - STA	(1,1/4,1/4 Well) q Submer	erged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME		169	1/4 WELL VOLUME	X VVELL OF	GIT-	3 WELL VOLUMES	0.5	7)8	5 WELL VOLUMES		
VOLU	·	EQUIPMENT VO		IP VOLUME +	(TUBING CAF		BING LEGNTH) + FLOW CEL		<u> </u>	
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI			1	ING LEGNTH L (FEET)		PURGE TIME START	1142	PURGE TIME END	1157	TOTAL PURGED	1.50
INST. ID		\searrow	\searrow	\times	SAL-SAM-63-	SAL-SAM - 65- <u>&/</u>	SAL-SAM-63-	SAL-SAM-55-	SAL-SAM-	\searrow	\geq
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (∆ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1145	0.30	0.30	0.10	5.82	6.4	27.6	395.8	2.08	MAY	BROWN	NONE
1148	0.30	0.60	† **** <i>†</i> ***	1	10-3			1.70		 	1
1151	0.30	0.90	1		le-2			1.80		\ '	1
1154	0.30	1.20			6.2		367.2		694		1
1157	0.30	1.50			6.2	27.6	362.7	1	496 6"-147 12	/	1
TUB		Capacity (gallons/f A. CAPACITY (Ga					7, 4"=0.65, 5/16" = 0.004		·	2"5.88).010; 5/8" = 0	0.016
<u> </u>	110 11.0.				AMPLIN						
1	BY / COMPANY RINT)		SAL				PLER(S) ATURES:		A.:	N	
	TERIAL CODE LE ONE)	PP PE NI	P(TL)TT		E TUBING WELL (FEET)	,			PUMP FLOW (mL/min)	<u></u>	
SAMPLING INITIATED		SAMPLING ENDED	1159	FIELD CLEANED	YW	CLEANING STEPS			1-7-11-1/01	- COLLECTE!	
FIELD FILTERED?	, Y (N)	FILTER SIZE (μm)		DUPLICATE	E Y (N)		LLECTED BY SE FLOW?	Y N CNA	SEMI-VOLS THROU	S COLLECTED JGH TRAP?	YNQ
PRESER	RVATION D IN FIELD?	⊗ N N/A		SERVATIVES DDED							
	ATHER DITIONS	Clear,	85.								
СОМ	IMENTS					2 46	120-	- Pladd			
	TU	PUMP CO JBING MATERIAL	ODES: PP=Pe	= Polypropyler	ne. PE= Polye	sible Grunatos thylene, NP=	Non-inert Plas	In-place Bladde stic, TL= Teflon	Lined, TT= T	reflon	
	Deviewed Du						Date				

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

				GR	OUNDV	VATER S	SAMPLI	NG LO	}			
Client Name:	1-	lazen and Sawye	r		Location:				Contact: Phone:			
Date Sampled	00	82217			SAL Project	1200	7016		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA4-PZ-16-L8			#		1) (GPS LAT			
					P	URGING	DATA		GPS LONG			
WELL		WELL			Screen				Static Depth	,	PURGE	PP) GI
DIAMETER (Inches)	1.0	CAPACITY (gal/ft)	0.0	4	Interval (Feet)	UNK	То	UNK	to Water (Feet)	5.80	PUMP CODE	IBP
TOTAL WELL		REFERENCE			GROUN	WATER			TUBING		TUBING	
DEPTH (Feet)	17.28	ELEVATION (NGVD)				ATION CE-STATIC)			DIAMETER (Inches)		CAPACITY (gal/ft)	
Purge Tec	hnique: q Sul	omerged Screen	(1,1/4,1/ ₄	4 Well) q Subme	rged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL	OLUME = (TO	TAL DEPTH - ST	ATIC DE		x WELL CAP	ICITY =	3 WELL			5 WELL		
VOLUME	O .4	459	VOLU	ME			VOLUMES	1.3		VOLUMES		
		EQUIPMENT V			IP VOLUME +	· (TUBING CAI		BING LEGNTH	I) + FLOW CEL			
PUMP VOLUME			TUBI LEGN				FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI	NG LEGNTH		FINAL	TUBII	NG LEGNTH		PURGE TIME		PURGE TIME		TOTAL	2 0
IN WELL	. (FEET)		IN	WELL	_ (FEET)		START	1201	END	121G	PURGED	3.00
INST. ID	\times	><	>	<	\times	SAL-SAM-63-	SAL-SAM - 65-20)	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0_/	\times	\times
	VOLUBAT	TOTAL		_	Dorath to	pH	TEMP	SP COND	DO	TURBIDITY		
TIME	VOLUME PURGED	VOLUME PURGED	PUR RATE (Depth to Water	(SU)	(oC)	(uS/cm)	(mg/L)	(NTUs)	COLOR (Describe)	ODOR (Describ
	(Gallons)	(Gallons)	10112	(9)	(Feet)	(Δ <0.2)	(∆ <0.2)	(∆ <5%)	(% SAT <20)	(<20 NTU)	((
1204	0.60	0.60	0.7	20	5.96	5.5	26.6	252.9	0.72	MAK	BROWN	NON
1201	0,60	1.20	,	1	1	5.5	26.5	250.8	0.59	MAX	1	1
1210	0.60	1.80				5.4	74.5	239.0	0.68	MAX		
1213	0.60					5.3	26.5	234.5	0.66	812		
1216	0.60					5.3		230.7		749		1
1 010		Capacity (gallons/	foot): 0.	75"=0.	02, 1.25"=	0.06, 2"=0.1	6, 3"=0.37	, 4"=0.65,			"5.88	1
TUBI	NG INSIDE DIA	A. CAPACITY (G	al./Ft.):	1/8" =				5/16" = 0.00	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" =	0.016
0.1.151 5D D	/	ı .			5	AMPLIN		PLER(S)			- 1/	
	(/ COMPANY INT)	5	A	<u></u>				TURES:	•			
	ERIAL CODE E ONE)	PP PE N	P	π		E TUBING WELL (FEET)			SAMPLE PU RATE (I			
SAMPLING	1217	SAMPLING ENDED	121	8	FIELD CLEANED	Y (1)	CLEANING STEPS					
FIELD	Y (N)	FILTER SIZE			DUPLICATE	Y (1)	VOC COL	LECTED BY SE FLOW?	Y N (N/A		COLLECTED	Y N I
FILTERED? PRESE	RVATION	(μm) N N/A	LIST	PRES	I ERVATIVES		I KEVER	SE PLOVV?		1 1111000	ON TOOL ?	
CHECKED	IN FIELD?				DED	<u> </u>						
	THER ITIONS	Clea	۲, ۶	32								
СОМ	MENTS								- · · · · · · · · · · · · · · · · · · ·			
		PUMP CO	DDES: P	P=Pe	ristaltic Pumo	. GP= Submer	sible Grundfos	Pump, IBP= I	n-place Bladde	Pump		
	TUI	BING MATERIAL	CODES	: PP=	Polypropylen	e, PE= Polyet	hylene, NP= l	Non-inert Plast	ic, TL= Teflon	Lined, TT= Te	eflon	
	oviewed By							Date	1			

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

11	UBAYVIE	EW BOULE			VATER S				813-850	5-2218	
Client Name:	Н	lazen and Sawye		Location:				Contact:			
Date Sampled		82212		SAL Project	1200	016		Phone: Project Name	S&GV	V Test Facility	 SE #2
Well Number		TA4-PZ-09-TU14		#	18			GPS LAT			
				P	URGING			GPS LONG			
WELL		WELL		Screen	O CONTO	DAIA		Static Depth		PURGE	PP) GP
	1.0	CAPACITY (gal/ft)	0.04	Interval (Feet)	UNK	То	UNK	to Water (Feet)	5.08	PUMP CODE	PP) GP IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUND ELEV/ (REFERENC	ATION CE-STATIC)		· · · · · · · · · · · · · · · · · · ·	TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (TAL DEPTH - STA			ged Screen (1 CITY =	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	0.1	9	1/4 WELL VOLUME			3 WELL VOLUMES	0.5		5 WELL VOLUMES		
		EQUIPMENT VO	DLUME = PUN	IP VOLUME +	(TUBING CA	PACITY X TUI	BING LEGNTH	l) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL	1			NG LEGNTH L (FEET)		PURGE TIME START	1335	PURGE TIME END	1350	TOTAL PURGED	1.50
INST. ID	\times	>	\times	\times	SAL-SAM-63-	SAL-SAM - 65- <i>©)</i>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1338	0.30	0.30	0.10	5.40	4.7	27.8	168-4	1.09	MAX	BROWN	NONE
1341	0.30	0.60			4.7	27.6	161.9		MAX		
1344	0.30	0.90			4.7	27.6	159.4	0.65	MAX		
1347	0.30	1.20			4,7	27.6	159.5	0.65	MAX		
1350	0,70	7-50 apacity (gallons/f	(not): 0.75"-0	02, 1.25"=0	华. 7 0.06, 2"=0.1	27. (g 6. 3"=0,37	4"=0.65.	0.UT 5"=1.02. 6	MAX "=1,47, 12	"5.88	Į.
TUBIN		A. CAPACITY (Ga					5/16" = 0.00				0.016
				S	AMPLIN	G DATA	1				
SAMPLED BY (PRI			SH	(_			PLER(S) TURES:		1:	Ŋ	
	ERIAL CODE E ONE)	PP PE N	· (TL)Π		TUBING WELL (FEET)				JMP FLOW mL/min)		
SAMPLING INITIATED	1351	SAMPLING ENDED	1352	FIELD CLEANED	Y(N)	CLEANING STEPS					
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)		DUPLICATE	Y (N)		LECTED BY SE FLOW?	Y N (N/A)		COLLECTED GH TRAP?	Y N (N/A
	RVATION IN FIELD?	₹ N/A		DED DED			<u> </u>				
1	THER ITIONS	Clean,	, 85	ð							
COMI	MENTS										
	•	PUMP CC	DES: PP=Pe	ristaltic Pump,	GP= Submers	sible Grundfos	Pump, IBP= I	n-place Bladde	Pump	offen	
	TUE	ING MATERIAL	CODES: PP=	Polypropylen	e, PE= Polyeti	nylene, NP= l	Non-inert Plast		Linea, II=Te	SHOF	

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

			GH	COUNDY	VAIER	SAMPLI	NG LOG	j			
Client Name:	H	lazen and Sawye	r	Location:				Contact:			
Date Sampled		32212		SAL Project	1209	0)(0		Phone: Project Name	S&GV	V Test Facility	SE #2
Well Number		TA4-PZ-16-TU14		#	1-0	<u>a</u>		GPS LAT			
VVCII IVCIIIOCI		7,1412 10 1011			URGING	DATA		GPS LONG			
				Г	UKGING	DAIA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	004	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	5.80	PURGE PUMP CODE	€P GP
TOTAL WELL DEPTH (Feet)	17.08	REFERENCE ELEVATION (NGVD)	:	GROUND ELEV/ (REFERENC	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	hnique: q Sul	omerged Screen (TAL DEPTH - ST	(1,1/4,1/4 Well) q Submer	ged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
	DLUME = (10	IAL DEPTH - ST	······································	X WELL CAPI	CITY =	A11511	I		5 VA (T. L.		
ONE WELL VOLUME	0.4	FS1 EQUIPMENT VO	1/4 WELL VOLUME	ID VOLUME :	(TUDING OA	3 WELL VOLUMES	1.35		5 WELL VOLUMES		
		EQUIPMENT VO	DLUME = PUN	IP VOLUME +	(TUBING CAL	PACITY X TUE	ING LEGNIH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME	:		EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL				NG LEGNTH _ (FEET)		PURGE TIME START	1354	PURGE TIME END	1409	TOTAL PURGED	3.00
INST. ID	> <	><	><	><	SAL-SAM-63-	SAL-SAM - 65	SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1357	0.60	0.60	0.20	6.04	5.1	26.4	2ZG-7	0.40	MAX	BROWN	NONE
1400	0.60	1.20		j.	5.2	24.6	226-3	Q.38	MAX		1
1703	0.60	1.80			5.2		226.4	0.36		\	
140 ce	0.60	2.40			5.2			0.35	694		
1709	0.60	3.00		1	5.2	26.5	226.5	0.34	514		
	Well (Capacity (gallons/	foot): 0.75"=0.	.02, 1.25"=0	0.06, 2"=0.1	6, 3"=0.37	, 4"=0.65,	5"=1.02, 6	"=1.47, 12	"5.88	
TUBII	NG INSIDE DI	A. CAPACITY (G	al./Ft.): 1/8" =	0.0006; 3/16'	' = 0.0014; 1	/4" = 0.0026;	5/16" = 0.004	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" =	0.016
				S	AMPLIN	G DATA	1				
SAMPLED BY (PR	(/ COMPANY INT)		SAL			1	PLER(S) ATURES:		>6	Cide 1	7
	ERIAL CODE E ONE)	PP PE N	РПП	-	TUBING WELL (FEET)			SAMPLE PI RATE (I			
SAMPLING INITIATED	1410	SAMPLING ENDED	1411	FIELD CLEANED	Y (N)	CLEANING STEPS		I			
FIELD FILTERED?	YW	FILTER SIZE (μm)		DUPLICATE	Y (N)		LECTED BY SE FLOW?	Y N MA		COLLECTED GH TRAP?	Y N NA
	RVATION IN FIELD?	Y N N/A		SERVATIVES DED				************			
	THER ITIONS				-						
COM	MENTS			-					2	***	
		PUMP CO	DDES: PP=Pe	ristaltic Pump	GP= Submer	sible Grundfos	Pump, IBP= I	n-place Bladder	Pump	effor	
		BING MATERIAL	CODES: PP=	Polypropylen	e, PE= Polyet	nylene, NP= I			Linea, 11=10	EHOH	
R	eviewed By	:\					Date				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

, ,	O DAT VIE	EW BOULE	•		VATER S						
Client Name:	Н	azen and Sawye	r	Location:		-		Contact: Phone:		1- 11	
Date Sampled		182212		SAL Project	1200	3016		Project Name	S&GV	V Test Facility	SE #2
Well Number		A4-PZ-09-TU16		#	2.6	1010		GPS LAT			
				Р	URGING	DATA		GPS LONG			
WELL		WELL		Screen			LINK	Static Depth		PURGE PUMP	(PP) GP
DIAMETER (Inches)	1.0	CAPACITY (gal/ft)	0.04	Interval (Feet)	UNK	То	UNK	to Water (Feet)	5.42	CODE	IBP
TOTAL WELL DEPTH (Feet)		REFERENCE ELEVATION (NGVD)		GROUNE ELEV/ (REFEREN	ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	chnique: q Sub	omerged Screen (TAL DEPTH - ST	1,1/4,1/4 Well) q Submer	ged Screen (1 CITY =	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	0.1		1/4 WELL VOLUME	X VILLE O/II I	0.11	3 WELL VOLUMES	0.5	3 (5 WELL VOLUMES		
	,	EQUIPMENT VO		IP VOLUME +	(TUBING CA	PACITY X TUI			LVOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL	NG LEGNTH . (FEET)			NG LEGNTH L (FEET)		PURGE TIME START	1257	PURGE TIME END	1312	TOTAL PURGED	1.50
INST. ID	\times	> <	\times	\times	SAL-SAM-63- <u>೮/</u>	SAL-SAM - 65- <u>0/</u>	SAL-SAM-63	SAL-SAM-55- OZ	SAL-SAM- 0_/	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1300	0.30	0.30	0.10	5.70	5.0	27.5	763.8	1.74	MAX	BROWN	NONE
1303	0.30	0.60	i	(5.0	27.5	269.2	6.18	MAX		1
1304	0.30	0.90			5.0	27.5	269.5	0.90	MAX		
1309	0.30	1.20			5.0	27.5	270.8	0.71	MAX		
1312	0.30	1.50			5.0	27.5	270.9	0.85	MAY	15.00	1
TUBI		Capacity (gallons/					', 4"=0.65, 5/16" = 0.00			.010; 5/8" =	0.016
		(······································		AMPLIN		4				
	Y / COMPANY RINT)		SAL				PLER(S) ATURES:)	Æ:	J	
	TERIAL CODE LE ONE)	PP PE N	Р ФП		E TUBING WELL (FEET)				UMP FLOW mL/min)	7	
SAMPLING INITIATED	1313	SAMPLING ENDED	1314	FIELD CLEANED	Y (N)	CLEANING STEPS					
FIELD FILTERED?	\ \(\rangle \(\rangle \)	FILTER SIZE (µm)		DUPLICATE	YN		LECTED BY SE FLOW?	Y N (N/A	SEMI-VOLS THROU	COLLECTED GH TRAP?	YNN
PRESE	RVATION O IN FIELD?	ØN N/A		SERVATIVES DED							
•	THER DITIONS	Clear	, 84°				1				
СОМІ	MENTS										
		PUMP CO	ODES: PP=Pe	eristaltic Pump	, GP= Submer	sible Grundfos	s Pump, IBP=	in-place Bladde	r Pump Lined TT= T	eflon	
1	TUI		CODES: PP	- Polypropylen	e, FE- Polyet	inyletie, NP-	Date				

Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

			GR	OUNDV	VATER S	SAMPLI	NG LOG	;			
Client Name:	L	lazen and Sawye	. [Location:				Contact:			
Client Name.		azen and Sawye	'	Location.				Phone:			
Date Sampled		08221	2	SAL Project #	1200	1016		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA4-PZ-16-TU16			_ 21			GPS LAT			
Vicii ivanibei		.,						GPS LONG			
				P	URGING	DATA					
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	5.50	PURGE PUMP CODE	€P GP IBP
TOTAL WELL DEPTH (Feet)	17.28	REFERENCE ELEVATION (NGVD)		ELEV	WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tecl	hnique: q Sul	omerged Screen	1,1/4,1/4 Well) q Submei	rged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
WELL V	OLUME = (TO	TAL DEPTH - ST	ATIC DEPTH)	x WELL CAPI	CITY =						
ONE WELL VOLUME	0:	171	1/4 WELL VOLUME			3 WELL VOLUMES	1.4	1	5 WELL VOLUMES		
		EQUIPMENT V	DLUME = PUN	IP VOLUME +	(TUBING CAI	PACITY X TUE	ING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL				NG LEGNTH (FEET)		PURGE TIME START	1316	PURGE TIME END	1331	TOTAL PURGED	3.00
INST. ID	X	\times	X	\times	SAL-SAM-63		SAL-SAM-63	SAL-SAM-55- OZ	SAL-SAM- 0	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1319	0.60	0.60	0.20	5.88	5.1	26.3	2358	0.48	MAX	BLOVE	NONE
1322	0.60	1.20	1		5.1	26.3	234.0	Ø.39	MAX		1
1325	0,60	1.80			5.1	26.3	236#	0.35	730		
1328	0.60	2.40			5.1	26.3	236.6	0.33	524		
1331	0.60		1		5.1	26.3	236.9	0.31	488	\	
		Capacity (gallons/							 		0.040
TUBI	NG INSIDE DI	A. CAPACITY (G	al./Ft.): 1/8" =			/4" = 0.0026;	5/16" = 0.00	4; 3/8" = 0.00	06; 1/2" = 0.	.010; 5/8" =	0.016
				S	<u>AMPLIN</u>	G DATA	\				
	Y / COMPANY INT)		SAL				PLER(S) ATURES:		1	9	
TUBING MAT	TERIAL CODE LE ONE)	PP PE N	P D TT		E TUBING WELL (FEET)				UMP FLOW mL/min)		
					T 7.			.1			

SAMPLING SAMPLING FIELD CLEANING Y (N) 1333 **STEPS** ENDED **CLEANED** INITIATED VOC COLLECTED BY SEMI-VOLS COLLECTED FILTER SIZE Y N WA Y N NA FIELD Y(N)DUPLICATE THROUGH TRAP? **REVERSE FLOW?** FILTERED? (μ**m**) LIST PRESERVATIVES PRESERVATION √ N N/A **CHECKED IN FIELD?** ADDED Clear, 85° WEATHER CONDITIONS COMMENTS PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon Date: Reviewed By:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		PZ01-BKG-09						
Matrix		Groundwater						
SAL Sample Number		1209020-01						
Date/Time Collected		08/24/12 11:48						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
рН	SU	4.9	DEP FT1100	0.1	0.1		08/24/12 11:48	SAS
Water Temperature	°C	28.5	DEP FT1400	0.1	0.1		08/24/12 11:48	SAS
Specific conductance	umhos/cm	48	DEP FT1200	0.1	0.1		08/24/12 11:48	SAS
Dissolved Oxygen	mg/L	4.3	DEP FT1500	0.1	0.1		08/24/12 11:48	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/28/12 12:38	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	4.4	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	0.02 I	EPA 353.2	0.04	0.01		08/27/12 11:57	MMF
Total Kjeldahl Nitrogen	mg/L	0.35	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 11:53	MMF
Sample Description		LY01-BKG-24						
Matrix		Groundwater						
SAL Sample Number		1209020-02						
Date/Time Collected		08/22/12 08:30						
Collected by		Josephine Edeback-l	Hirst					
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
pH		6.3						
Temperature		26.3 °C						
Conductivity		236 umhos						
Dissolved Oxygen		6.6 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.033 I	EPA 350.1	0.040	0.009		08/28/12 12:40	MMF
Ammonium as NH4	mg/L	0.04	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	6.3	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 353.2	0.04	0.01		08/27/12 11:58	MMF
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	08/23/12 11:26	08/27/12 12:40	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Laboratory Report

Project Name S&GW Test Facility SE#2								
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		LY02-BKG-42 Groundwater 1209020-03 08/22/12 08:40 Josephine Edeback-H 08/24/12 13:30	irst					
Client Provided Field Data pH Temperature Conductivity Dissolved Oxygen		6.5 26.4 °C 532 umhos 6.6 mg/L						
Inorganics Nitrate+Nitrite (N)	mg/L	0.01 U	EPA 353.2	0.04	0.01		08/27/12 11:59	MMF
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		PZ04-BKG-09 Groundwater 1209020-04 08/24/12 08:30 Josephine Edeback-H 08/24/12 13:30	irst					
Client Provided Field Data pH Temperature Conductivity Dissolved Oxygen		5.1 27.6°C 167 umhos 4.5 mg/L						
Inorganics Ammonia as N Ammonium as NH4	mg/L mg/L	0.015 I 0.02	EPA 350.1 EPA 350.1	0.040 0.01	0.009 0.005	08/31/12 15:51	08/28/12 12:44 08/31/12 15:52	MMF MMF

EPA 300.0

EPA 353.2

EPA 351.2

0.20

0.40

0.20

0.050

0.10

0.05

08/27/12 08:31

Sample Description PZ04-BKG-09 DUP
Matrix Groundwater
SAL Sample Number 1209020-05
Date/Time Collected 08/24/12 08:35

Collected by Josephine Edeback-Hirst

mg/L

mg/L

mg/L

6.0

10

2.5

Date/Time Received 08/24/12 13:30

Client Provided Field Data

Chloride

Nitrate+Nitrite (N)

Total Kjeldahl Nitrogen

 pH
 5.1

 Temperature
 27.6 °C

 Conductivity
 167 umhos

 Dissolved Oxygen
 4.5 mg/L

08/28/12 01:34

08/27/12 11:06

08/28/12 12:52

JAG

MMF

MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Project Name								
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		PZ04-BKG-09 DUP						
Matrix		Groundwater						
SAL Sample Number		1209020-05						
Date/Time Collected		08/24/12 08:35						
Collected by		Josephine Edeback-H	lirst					
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
рН		5.1						
Temperature		27.6 °C						
Conductivity		167 umhos						
Dissolved Oxygen		4.5 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.012 I	EPA 350.1	0.040	0.009		08/28/12 12:45	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	6.2	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	10	EPA 353.2	0.40	0.10		08/27/12 11:08	MMF
Total Kjeldahl Nitrogen	mg/L	2.4	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 11:56	MMF
Sample Description		PZ24-BKG-26						
Matrix		Groundwater						
SAL Sample Number		1209020-06						
Date/Time Collected		08/24/12 09:30						
Collected by		Josephine Edeback-F	lirst					
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
pН		5.0						
Temperature		25.8 °C						
Conductivity		294 umhos						
Dissolved Oxygen		1.9 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.010 I	EPA 350.1	0.040	0.009		08/28/12 12:47	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Chloride	mg/L	17	EPA 300.0	0.20	0.050		08/28/12 01:34	JAG
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	0.40	0.10		08/27/12 11:11	MMF
Phosphorous - Total as P	mg/L	0.67	SM 4500P-E	0.040	0.010	08/27/12 13:35	08/28/12 12:30	MMF
Total Alkalinity	mg/L	4.2	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 11:58	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Laboratory Report

Project Name		S&GW Test	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		PZ24-BKG-26 DUP						
Matrix		Groundwater						
SAL Sample Number		1209020-07						
Date/Time Collected		08/24/12 09:35						
Collected by		Josephine Edeback	-Hirst					
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
pH		5.0						
Temperature		25.8 °C						
Conductivity		294 umhos						
Dissolved Oxygen		1.9 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.012 I	EPA 350.1	0.040	0.009		08/28/12 12:49	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Chloride	mg/L	17	EPA 300.0	0.20	0.050		08/28/12 16:23	JAG
Nitrate+Nitrite (N)	mg/L	13	EPA 353.2	0.40	0.10		08/27/12 11:13	MMF
Phosphorous - Total as P	mg/L	0.67	SM 4500P-E	0.040	0.010	08/27/12 13:35	08/28/12 14:07	MMF
Total Alkalinity	mg/L	4.2	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 11:59	MMF

Sample Description PZ-29-BKG09

Matrix Groundwater

SAL Sample Number 1209020-08

Date/Time Collected 08/23/12 11:35

Collected by Josephine Edeback-Hirst

Date/Time Received 08/24/12 13:30

рН		5.5						
Temperature		29.8 °C						
Conductivity		211 umhos						
Dissolved Oxygen		1.6 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/28/12 12:50	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Chloride	mg/L	7.7	EPA 300.0	0.20	0.050		08/28/12 16:23	JAG
Nitrate+Nitrite (N)	mg/L	3.6	EPA 353.2	0.40	0.10		08/27/12 11:15	MMF
Phosphorous - Total as P	mg/L	0.12	SM 4500P-E	0.040	0.010	08/27/12 13:35	08/28/12 12:33	MMF
Total Alkalinity	mg/L	3.2 I	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	0.96	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 12:00	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Laboratory Report

Project Name		S&GW Test	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		PZ-30-BKG-16						
Matrix		Groundwater						
SAL Sample Number		1209020-09						
Date/Time Collected		08/23/12 12:45						
Collected by		Josephine Edeback	-Hirst					
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
pH		5.3						
Temperature		26.7 °C						
Conductivity		305 umhos						
Dissolved Oxygen		1.5 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.010 I	EPA 350.1	0.040	0.009		08/29/12 13:51	MMF
Ammonium as NH4	mg/L	0.01	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Chloride	mg/L	17	EPA 300.0	0.20	0.050		08/28/12 16:23	JAG
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	0.40	0.10		08/27/12 11:17	MMF
Phosphorous - Total as P	mg/L	0.070	SM 4500P-E	0.040	0.010	08/27/12 13:35	08/28/12 12:34	MMF
Total Alkalinity	mg/L	8.4	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	0.85	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 12:01	MMF

Sample Description PZ-31-BKG-26
Matrix Groundwater
SAL Sample Number 1209020-10
Date/Time Collected 08/23/12 13:30

Collected by Josephine Edeback-Hirst

Date/Time Received 08/24/12 13:30

pH Temperature Conductivity Dissolved Oxygen		5.0 26.7 °C 316 umhos 1.2 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.19	EPA 350.1	0.040	0.009		08/29/12 12:45	MMF
Ammonium as NH4	mg/L	0.24	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Chloride	mg/L	19	EPA 300.0	0.20	0.050		08/28/12 16:23	JAG
Nitrate+Nitrite (N)	mg/L	13	EPA 353.2	0.40	0.10		08/27/12 14:28	MMF
Phosphorous - Total as P	mg/L	0.12	SM 4500P-E	0.040	0.010	08/27/12 13:35	08/28/12 14:08	MMF
Total Alkalinity	mg/L	4.2 I	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kieldahl Nitrogen	ma/L	1.4	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 12:03	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		PZ-31-BKG-26 DUP						
Matrix		Groundwater						
SAL Sample Number		1209020-11						
Date/Time Collected		08/23/12 13:35						
Collected by		Josephine Edeback	-Hirst					
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
pH		5.0						
Temperature		26.7 °C						
Conductivity		316 umhos						
Dissolved Oxygen		1.2 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.18	EPA 350.1	0.040	0.009		08/29/12 12:47	MMF
Ammonium as NH4	mg/L	0.23	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Chloride	mg/L	19	EPA 300.0	0.20	0.050		08/28/12 16:23	JAG
Nitrate+Nitrite (N)	mg/L	10	EPA 353.2	0.40	0.10		08/27/12 14:30	MMF
Phosphorous - Total as P	mg/L	0.12	SM 4500P-E	0.040	0.010	08/27/12 13:35	08/28/12 12:39	MMF
Total Alkalinity	mg/L	6.3 I	SM 2320B	8.0	2.0	08/28/12 12:00	08/28/12 16:15	AES
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 12:04	MMF

Sample Description PZ32-BKG09
Matrix Groundwater
SAL Sample Number 1209020-12
Date/Time Collected 08/23/12 14:15

Collected by Josephine Edeback-Hirst

Date/Time Received 08/24/12 13:30

pH Temperature Conductivity Dissolved Oxygen		4.4 28.6 °C 249 umhos 2.2 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.016 I	EPA 350.1	0.040	0.009		08/29/12 12:49	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Chloride	mg/L	5.5	EPA 300.0	0.20	0.050		08/28/12 16:23	JAG
Nitrate+Nitrite (N)	mg/L	5.5	EPA 353.2	0.40	0.10		08/27/12 11:19	MMF
Phosphorous - Total as P	mg/L	0.035 I	SM 4500P-E	0.040	0.010	08/27/12 13:35	08/28/12 12:40	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/28/12 12:00	08/28/12 16:15	AES
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 13:48	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Laboratory Report

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		PZ33-BKG-16						
Matrix		Groundwater						
SAL Sample Number		1209020-13						
Date/Time Collected		08/23/12 15:00						
Collected by		Josephine Edeback	-Hirst					
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
pH		4.9						
Temperature		27.4 °C						
Conductivity		276 umhos						
Dissolved Oxygen		0.95 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.090	EPA 350.1	0.040	0.009		08/29/12 12:51	MMF
Ammonium as NH4	mg/L	0.12	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Chloride	mg/L	15	EPA 300.0	0.20	0.050		08/28/12 16:23	JAG
Nitrate+Nitrite (N)	mg/L	11	EPA 353.2	0.40	0.10		08/27/12 14:32	MMF
Phosphorous - Total as P	mg/L	0.032 I	SM 4500P-E	0.040	0.010	08/27/12 13:35	08/28/12 12:41	MMF
Total Alkalinity	mg/L	4.2	SM 2320B	8.0	2.0	08/28/12 12:00	08/28/12 16:15	AES
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 13:49	MMF

Sample Description PZ34-BKG-26
Matrix Groundwater
SAL Sample Number 1209020-14
Date/Time Collected 08/23/12 15:00

Collected by Josephine Edeback-Hirst

Date/Time Received 08/24/12 13:30

pH Temperature Conductivity Dissolved Oxygen		5.2 26.4 °C 318 umhos 1.80 mg/L						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.20	EPA 350.1	0.040	0.009		08/29/12 12:57	MMF
Ammonium as NH4	mg/L	0.26	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Chloride	mg/L	20	EPA 300.0	0.20	0.050		08/28/12 16:23	JAG
Nitrate+Nitrite (N)	mg/L	8.6	EPA 353.2	0.40	0.10		08/27/12 14:34	MMF
Phosphorous - Total as P	mg/L	0.42	SM 4500P-E	0.040	0.010	08/27/12 13:35	08/28/12 12:42	MMF
Total Alkalinity	mg/L	6.3 I	SM 2320B	8.0	2.0	08/28/12 12:00	08/28/12 16:15	AES
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 13:51	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Project Name		S&GW Tes	st Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		PZ35-BKG09						
Matrix		Water						
SAL Sample Number		1209020-15						
Date/Time Collected		08/24/12 09:52						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		08/24/12 09:52	SAS
Water Temperature	°C	26.8	DEP FT1400	0.1	0.1		08/24/12 09:52	SAS
Specific conductance	umhos/cm	564	DEP FT1200	0.1	0.1		08/24/12 09:52	SAS
Dissolved Oxygen	mg/L	1.6	DEP FT1500	0.1	0.1		08/24/12 09:52	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.044	EPA 350.1	0.040	0.009		08/29/12 12:59	MMF
Ammonium as NH4	mg/L	0.06	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	10	EPA 300.0	0.20	0.050		08/28/12 16:23	JAG
Nitrate+Nitrite (N)	mg/L	5.6	EPA 353.2	0.40	0.10		08/27/12 14:37	MMF
Total Alkalinity	mg/L	130	SM 2320B	8.0	2.0	08/28/12 12:00	08/28/12 16:15	AES
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 13:53	MMF
Sample Description		PZ36-BKG-16						
Matrix		Water						
SAL Sample Number		1209020-16						
Date/Time Collected		08/24/12 10:06						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
рН	SU	5.3	DEP FT1100	0.1	0.1		08/24/12 10:06	SAS
Water Temperature	°C	26.1	DEP FT1400	0.1	0.1		08/24/12 10:06	SAS
Specific conductance	umhos/cm	251	DEP FT1200	0.1	0.1		08/24/12 10:06	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/24/12 10:06	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.060	EPA 350.1	0.040	0.009		08/29/12 13:02	MMF
Ammonium as NH4	mg/L	0.08	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	8.0	EPA 300.0	0.20	0.050		08/28/12 16:23	JAG
Nitrate+Nitrite (N)	mg/L	7.3	EPA 353.2	0.40	0.10		08/27/12 14:39	MMF
Total Alkalinity	mg/L	5.2 I	SM 2320B	8.0	2.0	08/28/12 12:00	08/28/12 16:15	AES
Total Kjeldahl Nitrogen	mg/L	0.91	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 13:54	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		PZ37-BKG-26						
Matrix		Groundwater						
SAL Sample Number		1209020-17						
Date/Time Collected		08/24/12 10:28						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
рН	SU	5.0	DEP FT1100	0.1	0.1		08/24/12 10:28	SAS
Water Temperature	°C	25.4	DEP FT1400	0.1	0.1		08/24/12 10:28	SAS
Specific conductance	umhos/cm	302	DEP FT1200	0.1	0.1		08/24/12 10:28	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/24/12 10:28	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.019 I	EPA 350.1	0.040	0.009		08/29/12 13:04	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Chloride	mg/L	16	EPA 300.0	0.20	0.050		08/29/12 01:10	JAG
Nitrate+Nitrite (N)	mg/L	13	EPA 353.2	0.40	0.10		08/27/12 14:41	MMF
Phosphorous - Total as P	mg/L	1.7	SM 4500P-E	0.040	0.010	08/27/12 13:35	08/28/12 12:44	MMF
Total Alkalinity	mg/L	4.2	SM 2320B	8.0	2.0	08/28/12 12:00	08/28/12 16:15	AES
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 13:56	MMF
Sample Description		PZ38-BKG09						
Matrix		Water						
SAL Sample Number		1209020-18						
Date/Time Collected		08/24/12 10:29						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	6.1	DEP FT1100	0.1	0.1		08/24/12 10:49	SAS
Water Temperature	°C	26.6	DEP FT1400	0.1	0.1		08/24/12 10:49	SAS
Specific conductance	umhos/cm	246	DEP FT1200	0.1	0.1		08/24/12 10:49	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/24/12 10:49	SAS
Inorganics	_							
Ammonia as N	mg/L	0.023 I	EPA 350.1	0.040	0.009		08/29/12 13:06	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	6.2	EPA 300.0	0.20	0.050		08/29/12 01:10	JAG
Nitrate+Nitrite (N)	mg/L	0.99	EPA 353.2	0.40	0.10		08/27/12 14:48	MMF
Total Alkalinity	mg/L	22	SM 2320B	8.0	2.0	08/28/12 12:00	08/28/12 16:15	AES
Total Kjeldahl Nitrogen	mg/L	0.51	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 13:58	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		PZ39-BKG-16						
Matrix		Water						
SAL Sample Number		1209020-19						
Date/Time Collected		08/24/12 11:04						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	6.0	DEP FT1100	0.1	0.1		08/24/12 11:04	SAS
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		08/24/12 11:04	SAS
Specific conductance	umhos/cm	237	DEP FT1200	0.1	0.1		08/24/12 11:04	SAS
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		08/24/12 11:04	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.017 I	EPA 350.1	0.040	0.009		08/29/12 13:07	MMF
Ammonium as NH4	mg/L	0.02	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	6.5	EPA 300.0	0.20	0.050		08/29/12 01:10	JAG
Nitrate+Nitrite (N)	mg/L	3.3	EPA 353.2	0.40	0.10	00/00/40 40 00	08/27/12 14:50	MMF
Total Alkalinity	mg/L	32	SM 2320B EPA 351.2	8.0	2.0	08/28/12 12:00	08/28/12 16:15	AES
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 13:59	MMF
Sample Description		PZ40-BKG-26						
Matrix		Water						
SAL Sample Number		1209020-20						
Date/Time Collected		08/24/12 11:26						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
Client Provided Field Data								
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		08/24/12 11:26	SAS
Water Temperature	°C	25.0	DEP FT1400	0.1	0.1		08/24/12 11:26	SAS
Specific conductance	umhos/cm	296	DEP FT1200	0.1	0.1		08/24/12 11:26	SAS
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		08/24/12 11:26	SAS
<u>Inorganics</u>								
Ammonia as N	mg/L	0.025 I	EPA 350.1	0.040	0.009		08/29/12 13:09	MMF
Ammonium as NH4	mg/L	0.03	EPA 350.1	0.01	0.005	08/31/12 15:51	08/31/12 15:52	MMF
Chloride	mg/L	15	EPA 300.0	0.20	0.050		08/29/12 01:10	JAG
Nitrate+Nitrite (N)	mg/L	9.6	EPA 353.2	0.40	0.10		08/27/12 14:52	MMF
Total Alkalinity	mg/L	4.2	SM 2320B	8.0	2.0	08/28/12 12:00	08/28/12 16:15	AES
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	08/27/12 08:33	08/28/12 14:01	MMF

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22316 - Digestion fo	r TKN by EPA	351.2								
Blank (BH22316-BLK1)					Prepared:	08/23/12 Ar	nalyzed: 08	/27/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22316-BS1)					Prepared:	08/23/12 Ar	nalyzed: 08	/27/12		
Total Kjeldahl Nitrogen	2.49	0.20	0.05	mg/L	2.5		98	90-110		
Matrix Spike (BH22316-MS1)		Source: 1	209404-07		Prepared:	08/23/12 Ar	nalyzed: 08	/27/12		
Total Kjeldahl Nitrogen	2.69	0.20	0.05	mg/L	2.5	0.409	90	80-120		
Matrix Spike Dup (BH22316-MSD	1)	Source: 1	209404-07		Prepared:	08/23/12 Ar	nalyzed: 08	/27/12		
Total Kjeldahl Nitrogen	2.92	0.20	0.05	mg/L	2.5	0.409	99	80-120	8	20
Batch BH22701 - Digestion fo	r TKN by EPA	351.2								
Blank (BH22701-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22701-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	2.65	0.20	0.05	mg/L	2.5		105	90-110		
Matrix Spike (BH22701-MS1)		Source: 1	208987-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	7.94	0.20	0.05	mg/L	2.5	5.56	94	80-120		
Matrix Spike Dup (BH22701-MSD	1)	Source: 1	208987-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	8.31	0.20	0.05	mg/L	2.5	5.56	108	80-120	4	20
Batch BH22702 - Digestion fo	r TKN by EPA	351.2								
Blank (BH22702-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

A 1.	D "	DOL	MDI		Spike	Source	0/ DE0	%REC	DDD	RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22702 - Digestion f	or TKN by EPA	351.2								
LCS (BH22702-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	2.30	0.20	0.05	mg/L	2.5		91	90-110		
Matrix Spike (BH22702-MS1)		Source: 1	209020-20		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	3.69	0.20	0.05	mg/L	2.5	1.14	101	80-120		
Matrix Spike Dup (BH22702-MSI	D1)	Source: 1	209020-20		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	3.50	0.20	0.05	mg/L	2.5	1.14	93	80-120	5	20
Batch BH22704 - Nitrate 353	.2 by seal									
Blank (BH22704-BLK1)					Prepared 8	k Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22704-BS1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.786	0.04	0.01	mg/L	0.80		98	90-110		
Matrix Spike (BH22704-MS1)		Source: 1	209016-21		Prepared 8	k Analyzed:	08/27/12			
Nitrate+Nitrite (N)	12.4	0.40	0.10	mg/L	10	2.55	99	77-119		
Matrix Spike Dup (BH22704-MSI	D1)	Source: 1	209016-21		Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	12.7	0.40	0.10	mg/L	10	2.55	102	77-119	2	20
Batch BH22711 - COD prep										
Blank (BH22711-BLK1)					Prepared 8	k Analyzed:	08/27/12			
Chemical Oxygen Demand	10 U	25	10	mg/L			·			·

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22711 - COD prep										
LCS (BH22711-BS1)					Prepared 8	& Analyzed:	08/27/12			
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BH22711-MS1)		Source: 1	209016-05		Prepared 8	& Analyzed:	08/27/12			
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115		
Matrix Spike Dup (BH22711-MSD1)		Source: 1	209016-05		Prepared 8	& Analyzed:	08/27/12			
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115	0	32
Batch BH22715 - Ion Chromato	graphy 300.0	Prep								
Blank (BH22715-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH22715-BS1)					Prepared 8	& Analyzed:	08/28/12			
Chloride	2.97	0.20	0.050	mg/L	3.0		99	85-115		
LCS Dup (BH22715-BSD1)					Prepared 8	& Analyzed:	08/28/12			
Chloride	2.96	0.20	0.050	mg/L	3.0		99	85-115	0.3	200
Matrix Spike (BH22715-MS1)		Source: 1	209016-16		Prepared 8	& Analyzed:	08/28/12			
Chloride	14.8	0.20	0.050	mg/L	3.0	11.5	110	80-120		
Matrix Spike (BH22715-MS2)		Source: 1	209020-06		Prepared 8	& Analyzed:	08/28/12			
Chloride	20.6	0.20	0.050	mg/L	3.0	17.2	113	80-120		
Batch BH22716 - Nitrate 353.2	by seal									
Blank (BH22716-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

			MDI		Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22716 - Nitrate 353	3.2 by seal									
LCS (BH22716-BS1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.824	0.04	0.01	mg/L	0.80		103	90-110		
Matrix Spike (BH22716-MS1)		Source: 1	209416-02		Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	1.05	0.04	0.01	mg/L	1.0	ND	105	77-119		
Matrix Spike Dup (BH22716-MS	5D1)	Source: 1	209416-02		Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	ND	109	77-119	4	20
Batch BH22721 - Digestion	for TP by EPA 36	5.2/SM4500	PE							
Blank (BH22721-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22721-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Phosphorous - Total as P	0.790	0.040	0.010	mg/L	0.80		99	90-110		
Matrix Spike (BH22721-MS1)		Source: 1	209020-09		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0702	95	75-125		
Matrix Spike Dup (BH22721-MS	SD1)	Source: 1	209020-09		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0702	95	75-125	0.3	25
Batch BH22804 - Ammonia	by SEAL									
Blank (BH22804-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
EFAI									
PLAL									
					k Analyzed: (
0.49	0.040	0.009	mg/L	0.50		99	90-110		
	Source: 1	209016-10		Prepared 8	k Analyzed: (08/28/12			
0.49	0.040	0.009	mg/L	0.50	0.011	95	90-110		
	Source: 1	209016-10		Prepared 8	k Analyzed: (08/28/12			
0.49	0.040	0.009	mg/L	0.50	0.011	96	90-110	0.5	10
graphy 300.0	Prep								
				Prepared 8	k Analyzed: (08/28/12			
0.050 U	0.20	0.050	mg/L						
				Prepared 8	k Analyzed: (08/28/12			
3.05	0.20	0.050	mg/L	3.0		102	85-115		
				Prepared 8	Analyzed: (08/28/12			
3.05	0.20	0.050	mg/L	3.0		102	85-115	0	200
	Source: 1	209388-01		Prepared 8	Analyzed: (08/28/12			
847	0.20	0.050	mg/L	300	543	101	80-120		
	Source: 1	209020-16		Prepared 8	k Analyzed: (08/28/12			
11.4	0.20	0.050	mg/L	3.0	8.05	112	80-120		
graphy 300.0	Prep								
				Prepared 8	k Analyzed: (08/29/12			
0.050 U	0.20	0.050	mg/L						
	0.49 0.49 0.49 0.050 U 3.05 3.05 847 11.4 graphy 300.0	0.49 0.040 Source: 1 0.49 0.040 Source: 1 0.49 0.040 graphy 300.0 Prep 0.050 U 0.20 3.05 0.20 Source: 1 847 0.20 Source: 1 11.4 0.20 graphy 300.0 Prep	0.49 0.040 0.009 Source: 1209016-10 0.49 0.040 0.009 Source: 1209016-10 0.49 0.040 0.009 Source: 1209016-10 0.49 0.040 0.009 Source: 1209016-10 0.050 Source: 1209388-01 847 0.20 0.050 Source: 1209020-16 11.4 0.20 0.050 Source: 1209020-16 11.4 0.20 0.050 Source: 1209020-16 11.4 0.20 0.050 Source: 1209020-16 11.4 0.20 0.050 Source: 1209020-16 11.4 0.20 0.050 Source: 1209020-16 11.4 0.20 0.050 Source: 1209020-16 11.4 0.20 0.050	SEAL O.49 0.040 0.009 mg/L Source: 1209016-10 0.49 0.040 0.009 mg/L Graphy 300.0 Prep 0.050 U 0.20 0.050 mg/L 3.05 0.20 0.050 mg/L Source: 1209388-01 847 0.20 0.050 mg/L Source: 1209020-16 11.4 0.20 0.050 mg/L graphy 300.0 Prep	Result PQL MDL Units Level	Result PQL MDL Units Level Result	PQL MDL Units Level Result %REC	PQL MDL Units Level Result %REC Limits	No.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22819 - Ion Chromato	graphy 300.0	Prep								
LCS (BH22819-BS1)					Prepared 8	k Analyzed:	08/29/12			
Chloride	3.01	0.20	0.050	mg/L	3.0		100	85-115		
LCS Dup (BH22819-BSD1)					Prepared 8	k Analyzed:	08/29/12			
Chloride	3.09	0.20	0.050	mg/L	3.0		103	85-115	3	200
Matrix Spike (BH22819-MS1)		Source: 1	209452-01		Prepared 8	& Analyzed:	08/29/12			
Chloride	10.0	0.20	0.050	mg/L	3.0	6.87	104	80-120		
Matrix Spike (BH22819-MS2)		Source: 1	208986-03		Prepared 8	& Analyzed:	08/29/12			
Chloride	99.6	0.20	0.050	mg/L	30	68.1	105	80-120		
Batch BH22825 - alkalinity										
Blank (BH22825-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22825-BS1)					Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22825-MS1)		Source: 1	209020-06		Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	130	8.0	2.0	mg/L	120	4.2	100	80-120		
Matrix Spike Dup (BH22825-MSD1)		Source: 1	209020-06		Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	130	8.0	2.0	mg/L	120	4.2	100	80-120	0	26
Batch BH22840 - alkalinity										
Blank (BH22840-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
							,,,,,			
Batch BH22840 - alkalinity										
Blank (BH22840-BLK2)					Prepared 8	k Analyzed:	08/28/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22840-BS1)					Prepared 8	k Analyzed:	08/28/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
LCS (BH22840-BS2)					Prepared 8	k Analyzed:	08/28/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22840-MS1)		Source: 1	209590-08		Prepared 8	k Analyzed:	08/28/12			
Total Alkalinity	240	8.0	2.0	mg/L	120	120	95	80-120		
Matrix Spike (BH22840-MS2)		Source: 1	209698-05		Prepared 8	k Analyzed:	08/28/12			
Total Alkalinity	190	8.0	2.0	mg/L	120	65	103	80-120		
Matrix Spike Dup (BH22840-MSD1)		Source: 1	209590-08		Prepared 8	k Analyzed:	08/28/12			
Total Alkalinity	230	8.0	2.0	mg/L	120	120	86	80-120	5	26
Matrix Spike Dup (BH22840-MSD2)		Source: 1	209698-05		Prepared 8	k Analyzed:	08/28/12			
Total Alkalinity	180	8.0	2.0	mg/L	120	65	95	80-120	6	26
Batch BH22841 - Ammonia by S	SEAL									
Blank (BH22841-BLK1)					Prepared 8	k Analyzed:	08/29/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22841-BS1)					Prepared 8	k Analyzed:	08/29/12			
Ammonia as N	0.51	0.040	0.009	mg/L	0.50		102	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22841 - Ammon	nia by SEAL									
Matrix Spike (BH22841-MS1)	Source: 1	209404-07		Prepared 8	& Analyzed:	08/29/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50	0.042	90	90-110		
Matrix Spike Dup (BH22841-	-MSD1)	Source: 1	209404-07		Prepared 8	& Analyzed:	08/29/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.042	92	90-110	2	10

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 12, 2012 Work Order: 1209020

* Qualifiers, Notes and Definitions

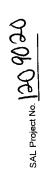
Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

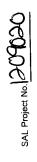
Finder



SOUTHERN ANALYTICAL LABORATORIES, INC. 110BAYVIEW BOULEVARD, OLD SMAR, FL 34877 813-855-1844 fax 813-855-2218

Client Name									Contact / Phone:	äi				
	Hazen a	Hazen and Sawyer												
Project Name / Location														
	S&GW	S&GW Test Facility SE#2	#5		-									
Samplers: (Signature)		1	D					PARAMETER	PARAMETER / CONTAINER DESCRIPTION	ESCRIPTION	- - -		-	
Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water	ewater SO-Soil r O-Other					PHI	4H [¢] , COD, TP 5SO ₄					<u></u>		tainers (Total
		9)8	əmi	strix composite	srab 50mL P, H ₂	.ки' иО×' и IГЬ' СООІ	LKN' NO×' I 520шГ Ь' Н`	ILP, Cool			00	Hq	Conductivii Temperatu	No. of Con per each lo
200	2	124	×	Τ,	` اع	<u> </u>					4.324.9		48.3 28.9	
01 PZ01-BKG-09		4 00		M _O	×	-					9.9	6,3		
		8 11/20/2	9.40°	OW.	×	X					6.6	6.55		
_		05.80241280		GW	×	-					4.5	<u> </u>	147 27.6	
$\overline{}$		-8		ВW	×	-					ケンケ		167 27.6	
1		0	0830	GW	×		-	-			<u>.</u>		264 25.8	,
		0	0935 0	GW	×	_	-				3	~ 1	2.42 412	
T		1 218280		GW	×		-	-			9'	5.5	811.112	
		•	tite	GW	×		-	-			<i>[</i> / ₂		305 28.0	0 1
1		-	330	GW	×		-	-			1.7	100	216 76.	
			325	MS	×		-	_			2.	500	5.03/6 26.7	
		-	415	, we	×		1	1			22	4.4	249 28.6	<u>.</u>
este.	Date/Time: 630	630 Received:	17,	B	Date/Time:	T18180	0	Seal intact?	Clevirre co.	②				
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Recair ed.)	Da	Date/Time: 1536	230		Received on ice? Temp	Temp	z z Q				
Refinquished: Da	Date/Time:	Received:			Date/Time:	:		Proper preservatives indicated?	ives indicated?	N N N				
Reinquished: D	Date/Time:	Received:		<u> </u>	Date/Time:			Rec'd within holding time?	Rec'd within holding time? Volatiles rec'd w/out headspace?	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\				
Relinquished: D	Date/Time:	Received:		<u> </u> ä	Date/Time:		; ;	Proper containers used?	s used?) × z × 💮				1209020
Chain of Custody As										Chain of Custody	stody			

Chain of Custody.xls Rev,Date 11/19/01



SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYNEW BOULEVARD, OLD SMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name										Contact / Phone	ne:					
	Hazen	Hazen and Sawyer					İ									
Project Name / Location	W.0.8.0	C.R.C.M. Test Facility SE#2	1v. SF#2													
Samplers: (Signature)	Now.		11													
	X								PARAMETER	CONTAINE	PARAMETER / CONTAINER DESCRIPTION			-		
Matrix Codes: DW-Drinking Water WWL-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water R-Reagent Water	Vastewater ge SO-Soil later O-Other	\				000, TP 5504								٨	e.	tainers (Total
Samula Description	ption	ətsO	əmi⊺	xintsM	Composite Grab	TKN, NOx, N 250mL P, H ₂	SEOML P. H.	тки, иох, і					Оа	Conductivit	Temperatu	No. of Con
22 D723 BVC 16		0828n	1500	Ν̈́Θ	×	-	-					0	0.95 4.9	3 276	4.7.2	
-		-	1	Α̈́	×	-	-					1	1.80 5:0	2318	26.54	
14 F234-BKG09		27412	52101700	<u>L</u> .	×		-	-				7	1.636.0	6.65ex	2.2	
			1001		×		-	-				0	0.36 5.3	> 251.	26.	
$\overline{}$			8201	ł	×		-					0	0.36 5.0	5.0 302.4 254	252 5	
			5401	1	×		-	1				0	0.45 6.1		2+6.026.6	
		-	10%		×		-	-				0	0.40 6.0	8 2x 2	8 25.9	
20 PZ40-BKG-26		-	1/26		×		-	-				0	0.32 5,2	5952 2	25.0	
														-		
Containers Prepared/	Date/Time: 1836	Received:	1		Date/Tim	Date/Time: 1873 O	0	Ses	Seal intact?		Z >					
REMINISHED GROWING	\$ 1212		7	2	U	218150	N	, is	Samples intact upon arrival?	arrival?	z					
Relinquished	Date/Time: 1330	Neces D	<i>\</i>	l	Date/In	Date/Tume: 1650	1880 14-17-	- Re	Received on ice? Temp	e l	z					
Relinquished:	Date/Time:	Received:	•		Date/Tin			£	Proper preservatives indicated?	indicated?	Ø Z					
Relinquished:	Date/Time:	Received:			Date/Time	esi esi		¥ \$	Rec'd within holding time? Volatiles rec'd w/out headspace?	time? headspace?	§					
Relinquished:	Date/Time:	Received:	i		Date/Time:	i	;	£	Proper containers used?	¿pa	Z (2)				•	1209020
Chain of Custody.4s Rev.Date 11/19/01											Chain o	Chain of Custody				

11	O BAYVIE	EW BOULE							813-855	5-2218	
	l		GR	ROUNDY	VATER	SAMPLI	NG LOC	Contact:			
Client Name:	н	lazen and Sawye	r	Location:				Phone:			
Date Sampled	08	24/2		SAL Project #	130'	302C)	Project Name	S&GV	/ Test Facility	SE #2
Well Number	_	PZ01-BKG-09			C	<u> </u>		GPS LAT GPS LONG			
				Р	URGING	DATA		0. 0 20.10			
WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.0(9	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	480	PURGE PUMP CODE	PP) GP IBP
TOTAL WELL DEPTH (Feet)	900	REFERENCE ELEVATION (NGVD)		_ `		·	···	TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen () q Subme	ged Screen (1	EQ Volume, 3	, 3 Minutes)	, ,	merged Scree	/	minutes)
	OLUME = (TO	TAL DEPTH - STA		x WELL CAPI	CITY =	3 WELL			5 WELL		
ONE WELL VOLUME	0.7	ZG4 EQUIPMENT VO	1/4 WELL VOLUME	IP VOLUME +	(TUBING CA	VOLUMES	0.7		VOLUMES		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME		,	EQUIPMEN T VOLUME	, , , , ,	
INITIAL TUBI IN WELL			FINAL TUBII IN WELL	NG LEGNTH _ (FEET)		PURGE TIME START	1138	PURGE TIME END	1147	TOTAL PURGED	0.90
INST. ID	\times	> <	\times	\times	SAL-SAM-63-	SAL-SAM - 65- <u>Ø/</u>	SAL-SAM-63	SAL-SAM-55- <u>O_2</u>	SAL-SAM-	\times	$>\!\!<$
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1 141	0.30	0.30	0.00	5-25	5.0	28.5	48.4	4.31	8.91	CLEAR	NON
144	0.70	0.60		/	4. 9	28.4	48.4	4.34	3.13	1	
1147	0.30	0.90			4.9	Z 8.5	48.3	4.32	7.85		
	Well C	Capacity (gallons/f	oot): 0.75"=0.	02, 1.25"=(0.06, 2"=0.1	6, 3"=0.37,	4"=0.65,	5"=1.02, 6	"=1.47, 12	'5.88	
TUBII	NG INSIDE DIA	A. CAPACITY (Ga	I./Ft.): 1/8" =					4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" = 0	0.016
				S	AMPLIN			44.			
	(/ COMPANY INT)		5AL				LER(S) TURES:	-	-		
	ERIAL CODE LE ONE)	PP PE NF	Т	-	TUBING WELL (FEET)			SAMPLE PI RATE (i			
SAMPLING INITIATED	1198	SAMPLING ENDED FILTER SIZE	1149	FIELD CLEANED		CLEANING STEPS	LECTED BY	· · · · · · · · · · · · · · · · · · ·	J-SEMILVOI S	COLLECTED	
FIELD FILTERED? PRESER	Y N RVATION	(μm)	LIST PRES	DUPLICATE ERVATIVES	YW		E FLOW?	Y N N/A		SH TRAP?	Y NCN/
WEA	THER	ON N/A Clea	r,89								
COM	MENTS	Org	anic v	maderia	/ in	well,	(Roc	1/5)			

Reviewed By:

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Date:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

			GR	OUNDV	VATER	SAMPLI	NG LO	}			
Client Name:	۲	lazen and Sawyer		Location:		•		Contact: Phone:			·· · · · · · · · · · · · · · · · · · ·
Date Sampled		082417	<u>.</u>	SAL Project	1209	040		Project Name	S&GV	/ Test Facility	SE #2
Well Number		PZ35-BKG09	·		1	5		GPS LAT			
				P	URGING			Or o Lono			
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	3.91	PURGE (PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUND ELEV/ (REFERENCE)	ATION	:		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree		minutes)
WELL V		TAL DEPTH - STA	1/4 WELL	x WELL CAPI	CITY =	3 WELL	T C	712	5 WELL		
VOLUME	0.2	237	VOLUME			VOLUMES	0,5		VOLUMES		
		EQUIPMENT VO	LUME = PUN	IP VOLUME +	(TUBING CAI		BING LEGNTH T	l) + FLOW CEL			
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL			FINAL TUBII IN WELL	NG LEGNTH . (FEET)		PURGE TIME START	0836	PURGE TIME END	0951	TOTAL PURGED	1.50
INST. ID	\times	\times	\times	\times	SAL-SAM-63-	SAL-SAM - 650/	SAL-SAM-63	SAL-SAM-55-	SAL-SAM-	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0939	0.30	0.30	0.10	4.90	Ce.5	26.8	801	0.86	MAX	BROVA	NONE
0742	6.30	0.60			6.5	26.8	792	0.70	MAT		1
0945	0.30	0.90			G.5	24.8	729	1.09	MAX		
0948	0.30	1.20			G.6	76.8	G71	1.49	986		
0952	0.30	1.50	1		Ce. Ce	26.8	564	1.63	509		
TURIN		Capacity (gallons/f				6, 3"=0.37 4" = 0.0026;	, 4"=0.65, 5/16" = 0.00			'5.88 010; 5/8" =	0.016
			,.		AMPLIN				•	•	
SAMPLED BY (PR	// COMPANY NT)		SAL			SAMP	PLER(S) TURES:		$\nearrow \langle$	=1	
	ERIAL CODE E ONE)	PP PE N	·ππ	1	TUBING WELL (FEET)			SAMPLE PI RATE (I			
SAMPLING INITIATED	0852	SAMPLING ENDED	0857	FIELD CLEANED	YW	CLEANING STEPS]				
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)	LIOT DDEC	DUPLICATE	YN		LECTED BY SE FLOW?	Y N N/A	SEMI-VOLS THROUG	COLLECTED SH TRAP?	YNN
	IN FIELD?	Y N N/A	AD	ERVATIVES DED							
	THER ITIONS	Clear	.,80	•							
COM	MENTS										
		PUMP CO						n-place Bladder			

Reviewed By:

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Date:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

			GR	CONDA	VATER	SAMPLI	NG LOC				
Client Name:	н	lazen and Sawye	r	Location:				Contact: Phone:			
Date Sampled		082412	>	SAL Project #	1200	1020		Project Name	S&G\	V Test Facility	SE #2
Well Number		PZ36-BKG-16		-	ŧ	llo		GPS LAT GPS LONG			
				Р	URGING			0. 0 20.10			
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	6-62	PURGE PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)	19.78	REFERENCE ELEVATION (NGVD)		ELEV	O WATER ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gai/ft)	
Purge Tech	nnique: q Sub	omerged Screen (TAL DEPTH - ST	(1,1/4,1/4 Well) q Subme	rged Screen (1	EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scre	en (1 Well, 3,3 I	minutes)
ONE WELL VOLUME	0.5°	2 Ce	1/4 WELL VOLUME			3 WELL VOLUMES	1.5		5 WELL VOLUMES		
		EQUIPMENT VO	DLUME = PUM	1P VOLUME +	(TUBING CAI		BING LEGNTH) + FLOW CEL		1	
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBIN				NG LEGNTH _ (FEET)		PURGE TIME START	0856	PURGE TIME END	1005	TOTAL PURGED	1.80
INST. ID	\times	> <	\times	\times	SAL-SAM-63 <u>0/</u>	SAL-SAM - 65- <u>Ø /</u>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0 <u>1</u>	\geq	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0959	0,60	B.60	0,20	7.14	5.5	26.1	254.8	0.72	73.4	CLOUDY	NONE
002	0.60	5 1.70	1	1	5.5	26.1	252.6	०मा	77-0	1	1
1005	0.60	1.80	<u> </u>		5.3	26.1	257.1	0.36	70.7		
		apacity (gallons/t					, 4"=0.65,	5"=1.02, 6		2"5.88	
TUBIN	IG INSIDE DIA	A. CAPACITY (Ga	il./Ft.): 1/8" =				5/16" = 0.00	4; 3/8" = 0.00	06; 1/2" = 0	.010; 5/8" =	0.016
011151 ED DV	// COMPANY			S	AMPLIN						
SAMPLED BY (PRI			<u>>/L</u>				PLER(S) ATURES:	-		× //	
TUBING MAT (CIRCLI		PP PE NI	° (С)п		E TUBING WELL (FEET)				UMP FLOW mL/min)		
SAMPLING INITIATED	1006	SAMPLING ENDED	1007	FIELD CLEANED	Y	CLEANING STEPS					
FIELD FILTERED?	Y	FILTER SIZE (µm)		DUPLICATE	YW		LECTED BY SE FLOW?	Y N N/A	SEMI-VOLS THROU	COLLECTED GH TRAP?	Y N (N/A
PRESER CHECKED		Ø N N/A		ERVATIVES DED							
WEAT CONDI	THER TIONS	Clear	· 80°			· · · · · · · · · · · · · · · · · · ·					
COMM	MENTS										
		PUMP CO	DES: PP=Pe	ristaltic Pump	, GP= Submer	sible Grundfos	s Pump, IBP= I	n-place Bladde	r Pump		
		BING MATERIAL	CODES: PP=	Polypropylen	e, PE= Polyet	hylene, NP=			Lined, TT= T	eflon	
Re	eviewed By	:]					Date				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

	<u> </u>	JINOUINDI	TATEIT CAMILEING		
Client Name:	Horon and Courses	Logation		Contact:	
Client Name:	Hazen and Sawyer	Location:		Phone:	
Date Sampled	082412	SAL Project #	1209020	Project Name	S&GW Test Facility SE #2
Maria Maria	D707 DKC 00		١٦.	GPS LAT	•
Well Number	PZ37-BKG-26		1+	GPS LONG	
		D	LIRGING DATA		•

PURGING DATA WELL Static Depth **PURGE** WELL Screen **⊕** GP PUMP UNK DIAMETER CAPACITY Interval UNK To to Water 3.12 0.04 1.0 IBP (Inches) (gal/ft) (Feet) CODE (Feet) TUBING TURING GROUND WATER REFERENCE TOTAL WELL **ELEVATION** DIAMETER CAPACITY **ELEVATION** 24.85 DEPTH (Feet) (REFERENCE-STATIC) (Inches) (gal/ft) (NGVD) q Partially Submerged Screen (1 Well, 3,3 minutes) q Submerged Screen (1EQ Volume, 3, 3 Minutes) Purge Technique: q Submerged Screen (1,1/4,1/4 Well) WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY = 1/4 WELL 3 WELL 5 WELL ONE WELL Z.60 0.86 **VOLUMES VOLUMES** VOLUME VOLUME EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME **EQUIPMEN TUBING** FLOW CELL PUMP VOLUME **T VOLUME LEGNTH** VOLUME PURGE **INITIAL TUBING LEGNTH** FINAL TUBING LEGNTH **PURGE TIME TOTAL** TIME 4.25 1010 **PURGED** IN WELL (FEET) **END** IN WELL (FEET) 1027 START SAL-SAM-63 SAL-SAM-63 SAL-SAM-55 SAL-SAM-SAL-SAM -INST. 01 02 01 65-<u>0</u> i 0_1 ID TOTAL SP COND TURBIDITY **TEMP** DO VOLUME Depth to pΗ COLOR **ODOR PURGE** VOLUME (uS/cm) (NTUs) (SU) (oC) (mg/L) TIME PURGED Water **PURGED** RATE (gpm) (Describe) (Describe) (∆ <5%) (% SAT <20) (<20 NTU) (Gallons) (Feet) $(\Delta < 0.2)$ $(\Delta < 0.2)$ (Gallons) CLOUDY 820 22.8 29*8*.3 5. . 25 0.25 6.08 1015 1.25 509 25.5 2.00 0.75 018 303-4 0.40 312 0.75 021 2.78 50 302.9 0.75 3 Z 5. 024 0.75 5.0 25,4 0.36 75.6 4.25 30 Z. S 102 Well Capacity (gallons/foot): 0.75"=0.02 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02. 6"=1 47 12"5.88 5/8" = 0.016 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004;3/8" = 0.006;1/2" = 0.010;

SAMPLING DATA

				O,		O D/\\.					
SAMPLED BY (PRI	-		s A	- (SAMPI SIGNA	LER(S) TURES:		>6		
TUBING MATI		PP PE NF	mm	SAMPLE LEGNTH IN V				SAMPLE PL RATE (r			
SAMPLING INITIATED	1028	SAMPLING ENDED	1029	FIELD CLEANED	YN	CLEANING STEPS					
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)		ECTED BY E FLOW?	Y N WA		COLLECTED GH TRAP?	Y N (N/A
PRESER CHECKED		N N/A		ERVATIVES DED							
WEAT CONDI		Clea	r, 8	2°							
COMM	MENTS										
		PUMP CO	DES: PP=Pe	ristaltic Pump,	GP= Submers	sible Grundfos	Pump, IBP= Ir	n-place Bladder	Pump		
	TUE	BING MATERIAL	CODES: PP=	Polypropylene	, PE= Polyetl	hylene, NP= N	lon-inert Plasti	ic, TL= Teflon l	ined, TT= Te	eflon	
Re	eviewed By						Date	:			

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

			GR	ROUNDY	VATER S	SAMPLI	NG LOG	;			
Client Name:	н	azen and Sawyer		Location:				Contact: Phone:			
Date Sampled	C	82412		SAL Project	1209())		Project Name	S&GV	V Test Facility	SE #2
Well Number		PZ38-BKG-09				18		GPS LAT GPS LONG			
				Р	URGING	DATA		<u> </u>			
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	2.89	PURGE PUMP CODE	€P GP IBP
TOTAL WELL DEPTH (Feet)	9.85	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Tec	hnique: q Sub	merged Screen (1,1/4,1/4 Well) q Submer	ged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	O.2	TAL DEPTH - STA	1/4 WELL VOLUME	X WELL CAPI	CITY =	3 WELL VOLUMES	0.8	35	5 WELL VOLUMES		
		EQUIPMENT VO	LUME = PUN	IP VOLUME +	(TUBING CAI	PACITY X TUE	BING LEGNTH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	1039	PURGE TIME END	1048	TOTAL PURGED	0.90
INST. ID	\times	\times	> <	\times	SAL-SAM-63	SAL-SAM - 65- <u>0/</u>	SAL-SAM-63	SAL-SAM-55- OZ	SAL-SAM- 0 <u>/</u>	\times	\geq
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1042	0.30	G-30	0.10	5.58	Ce.1	۲4.8	250.8	0.62	85.8	CLOUDY	NONE
1045	0.30	0.60			6.1			0.49	84. Ce		
1048	6.30	0.90			Ce.1	26.Ce	244.0	OH5	82.2		,
		apacity (gallons/f					<u> </u>			"5.88	
TUBI	NG INSIDE DIA	A. CAPACITY (Ga	I./Ft.): 1/8" =				5/16" = 0.004	4; 3/8" = 0.00	06; 1/2" = 0.	.010; 5/8" =	0.016
CAMBIED BY	// COMPANY			5/	AMPLIN		PLER(S)			- //	
	INT)		SAC				TURES:				
	ERIAL CODE E ONE)	PP PE NI	P (TL)Π		E TUBING WELL (FEET)				JMP FLOW mL/min)		
SAMPLING INITIATED	1049	SAMPLING ENDED	1050	FIELD CLEANED	YN	STEPS	LECTED BY		SEMI-VOI S	COLLECTED	T
FIELD FILTERED?	Y(N)	FILTER SIZE (μm)	LICT DDE	DUPLICATE	YW		SE FLOW?	Y N N/A		GH TRAP?	Y N N/A
	RVATION IN FIELD?	ŶN N/A		DED				<u>L.</u>			
	THER ITIONS	Cleo	r, 80	20							
СОМ	MENTS										
		PUMP CO	DES: PP=Pe	eristaltic Pump	, GP= Submer	sible Grundfos	Pump, IBP= I	n-place Bladde	r Pump	offen	
		BING MATERIAL	CODES: PP=	- Polypropylen	e, PE= Polyet	nylene, NP=1	Non-inert Plast Date		LINEU, II=I	CHOIT	
l R	eviewed By	:L						``			

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

			GR	COUNDY	VATER S	SAMPLI	NG LOG	;			
Client Name:	н	azen and Sawye	•	Location:				Contact: Phone:			
Date Sampled	,	082417		SAL Project #	12091	220		Project Name	S&GV	V Test Facility	SE #2
Well Number		PZ39-BKG-16			10	λ		GPS LAT GPS LONG			
	-			Р	URGING	DATA		0,010,00		**	
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	a.04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	5.80	PURGE PUMP CODE	PP GP
TOTAL WELL DEPTH (Feet)	19.80	REFERENCE ELEVATION (NGVD)		GROUNE ELEV/ (REFEREN	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		omerged Screen (TAL DEPTH - ST				EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME	0.9	500	1/4 WELL VOLUME			3 WELL VOLUMES	1. 0		5 WELL VOLUMES		
PUMP VOLUME		EQUIPMENT VO	TUBING LEGNTH	IP VOLUME +	(TUBING CAI	FLOW CELL VOLUME	BING LEGNTH) + FLOW CEL	EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	1054	PURGE TIME END	1103	TOTAL PURGED	1.80
INST. ID	\times	><	\times	\times	SAL-SAM-63	SAL-SAM - 65- <u>Ø /</u>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0 <u>/</u>	\times	><
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1057	0.60	0.60	0.70	608	(e.O	76.7	2308	0.62	14.8	CLEA	NONE
1100	O. (CO	1.20		/	6.0	25.9	234.9	0.51	13.6		
1103	0.60	1-80			6.0	25.6	236.8	0.40	12.5		
		capacity (gallons/i								"5.88	2010
TUBI	NG INSIDE DIA	A. CAPACITY (Ga	l./Ft.): 1/8" =		= 0.0014; 1. AMPLIN	/4" = 0.0026;	5/16" = 0.00	4; 3/8" = 0.00	06; 1/2" = 0.	010; 5/8" =	0.016
	(/ COMPANY		SAI		71411 12114	SAMF	PLER(S) ATURES:	5		M	
TUBING MAT	ERIAL CODE E ONE)	PP PE N	· (Î)π		TUBING WELL (FEET)				UMP FLOW mL/min)		
SAMPLING INITIATED	1104	SAMPLING ENDED	1105	FIELD CLEANED	ΥŒ	CLEANING STEPS		·	Location	- COLL FOTE	
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)	LIST PRES	DUPLICATE	Y (N)		LECTED BY SE FLOW?	Y N NA		GH TRAP?	Y N WA
	IN FIELD?	Ŷ N N/A	AD	DED							
	THER ITIONS	Clea	.r,8L	t°							· · · · · · · · · · · · · · · · · · ·
COMI	MENTS								·		
		PUMP CO	DES: PP=Pe	eristaltic Pump	GP= Submer	sible Grundfos	Pump, IBP= I	n-place Bladde	r Pump Lined TT= To	eflon	
R	eviewed By		CODES: PP=	- roiypropyien	e, re-roiyet	inylene, INF-	Date				
1											

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	082402	SAL Project #	1209020	Project Name	S&GW Test Facility SE #2
Mall Number	PZ40-BKG26		00	GPS LAT	
Well Number	P240-BKG20		90	GPS LONG	

PURGING DATA

				T.	UKGING	DAIA					
WELL DIAMETER (Inches)	59 1.0	WELL CAPACITY (gai/ft)	0-04	Screen Interval (Feet)	UNK	То	UNK	Static Depth to Water (Feet)	2.25	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	24.78	REFERENCE ELEVATION (NGVD)		GROUND ELEVA (REFERENC	ATION CE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		merged Screen (ged Screen (1	EQ Volume, 3	, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
WELL V	OLUME = (TO	TAL DEPTH - ST		x WELL CAPI	CITY =						
ONE WELL VOLUME	0.90		1/4 WELL VOLUME			3 WELL VOLUMES	2.7	·	5 WELL VOLUMES		
		EQUIPMENT VO	DLUME = PUM	P VOLUME +	(TUBING CA	PACITY X TUE	ING LEGNIH) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL			FINAL TUBII IN WELL			PURGE TIME START	1109	PURGE TIME END	1125	TOTAL PURGED	4-00
INST. ID	\times	> <	\times	\times	SAL-SAM-63- <u>O /</u>	SAL-SAM - 65- <u>O/</u>	SAL-SAM-63	SAL-SAM-55-	SAL-SAM- 0 <u>1</u>	\times	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1113	1.00	1.00	0.25	4.56	5.3	25.1	291.9	0.48	343	CLOUPY	NONE
111Ce	0.75	1.75		. /	5.3	25.1	293.0	0.45	209		1
1119	0.75	7.50			5.3	25.0	294.7	0.38	151		
1122	0.75	3.75	4		5.2	25.0	296.1	0.34	45.7		
1125	0.75	4.00			5.2	25.0	296.4	0.32	22.5	1	
		apacity (gallons/t					<u> </u>			'5.88	
TUBI	NG INSIDE DIA	A. CAPACITY (Ga	il./Ft.): 1/8" =	0.0006; 3/16"	= 0.0014; 1	/4" = 0.0026;	5/16" = 0.004	4; 3/8" = 0.00	6; 1/2" = 0.	010; 5/8" =	0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SA	- L	SAMPLER(S) SIGNATURES:	Z ,	-11
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT	SAMPLE TUBING LEGNTH IN WELL (FEET)		SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING //76	SAMPLING ENDED // Z	7 FIELD Y N	CLEANING STEPS		
FIELD Y (N)	FILTER SIZE (μm)	DUPLICATE Y N	VOC COLLECTED BY REVERSE FLOW?		COLLECTED Y N N/A
PRESERVATION CHECKED IN FIELD?	I / V / NI NI/A I	ESERVATIVES ADDED			
WEATHER CONDITIONS	Clear,	85°			
COMMENTS					
	PUMP CODES: PP=	Peristaltic Pump, GP= Submer P= Polypropylene, PE= Polyet	sible Grundfos Pump, IBP= I	n-place Bladder Pump	eflon
Reviewed By:		P= Polypropylene, PE= Polyec	Date		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 18, 2012 Work Order: 1209006

Laboratory Report

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA5-LY-C						
Matrix		Groundwater						
SAL Sample Number		1209006-01						
Date/Time Collected		08/20/12 13:30						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	1.8	SM 4550SF	0.04	0.01		08/21/12 15:33	ME
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 14:26	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/27/12 13:15	ME
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	08/22/12 12:36	08/27/12 13:22	ME
Chemical Oxygen Demand	mg/L	76	EPA 410.4	25	10	08/21/12 12:10	08/21/12 13:20	CDE
Chloride	mg/L	58	EPA 300.0	0.20	0.050		08/23/12 01:16	JAC
Nitrate+Nitrite (N)	mg/L	23	EPA 353.2	4.0	1.0		08/22/12 14:07	MMF
Phosphorous - Total as P	mg/L	4.1	SM 4500P-E	0.20	0.050	08/21/12 11:40	08/22/12 13:16	MMF
Sulfate	mg/L	50	EPA 300.0	0.60	0.20		08/23/12 01:16	JAC
Sulfide	mg/L	2.2	SM 4500SF	0.40	0.10		08/20/12 16:10	ME
Total Alkalinity	mg/L	75	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	3.2	EPA 351.2	0.20	0.05	08/21/12 16:10	08/23/12 11:18	MMF
Microbiology	9/=	V. -		0.20	0.00	00/21/12 10110	00/20/12 11110	
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	08/20/12 16:19	08/21/12 14:25	HKC
1 ecai Comornis	Ci 0/100 iiii	1 0	GIVI 9222D	'	<u> </u>	00/20/12 10.19	00/21/12 14.25	TINC
Sample Description		TA5-LINER-SP						
Matrix		Wastewater						
SAL Sample Number		1209006-02						
Date/Time Collected		08/24/12 11:45						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 15:10						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.15	EPA 350.1	0.040	0.009		08/26/12 11:04	MMF
Ammonium as NH4	mg/L	0.19	EPA 350.1	0.01	0.005		08/27/12 13:15	ME
Chemical Oxygen Demand	mg/L	150	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDE
Nitrate+Nitrite (N)	mg/L	1.6	EPA 353.2	0.40	0.10		08/27/12 10:42	MMF
Phosphorous - Total as P	mg/L	6.1	SM 4500P-E	0.40	0.10	08/27/12 13:35	08/28/12 13:15	MMF
Total Kjeldahl Nitrogen	mg/L	4.2	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 11:38	MMF
Sample Description		TA5-Denite Tank						
Matrix		Wastewater						
SAL Sample Number		1209006-03						
Date/Time Collected		08/24/12 10:50						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 15:10						
Inorganics								

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 18, 2012 Work Order: 1209006

Laboratory Report

Parameters	Project Name		S&GW Test F	acility SE#2					
Matrix SAL Sample Number 1209006-93 Date/Time Collected 08/24/12 10:50 Collected by Sean Schmidt 08/24/12 15:10 Hydrogen Sulfide (Unionized) mg/L 0.050 EPA 350.1 0.040 0.009 08/22/12 16:31 MEJ Ammonia as N Mg/L 0.050 EPA 350.1 0.040 0.009 08/22/12 16:31 MEJ Ammonia as NH4 Mg/L 0.050 EPA 350.1 0.010 0.005 08/22/12 14:40 08/22/12 13:15 MEJ Ammonia as NH4 Mg/L 0.061 EPA 350.1 0.010 08/22/12 14:40 08/22/12 13:35 MEJ Chemical Oxygen Demand Mg/L 120 EPA 410.4 25 10 08/22/12 14:50 08/22/12 13:35 MEJ Chemical Oxygen Demand Mg/L 120 EPA 410.4 25 10 08/22/12 13:35 MEJ Chemical Oxygen Demand Mg/L 120 EPA 410.4 25 10 08/22/12 13:35 08/22/12 13:36 MMF Phosphorous - Total as P Mg/L 1.3.5 SM 4500PE 0.40 0.10 08/22/12 13:35 08/22/12 13:36 MMF Phosphorous - Total as P Mg/L 1.2.5 EPA 350.2 0.04 0.01 08/22/12 0:00 08/22/12 13:35 08/22/12 13:16 MMF Sulfide Mg/L 1.2.5 EPA 350.2 0.00 08/22/12 0:00 08/22/12 14:10 08/22/12 14:	Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Matrix Matrix Mastewater SAL Sample Number 120906-03 120906-03 120906-03 120906-03 120906-03 120906-03 120906-03 120906-03 120906-04 120	Sample Description		TA5-Denite Tank						
Date/Time Collected by Sean Schmidt Date Time Received Date/Time Time Time Time Time Time Time Time			Wastewater						
Collected by Date/Time Received Date/Time Recei	SAL Sample Number		1209006-03						
Date/Time Received Mg/L 15:10 SM 4500F 0.04 0.01 0.027/12 16:31 MEJ Ammonia as N mg/L 0.050 EPA 350.1 0.040 0.009 0.026/12 11:06 MEJ Ammonia as N mg/L 0.06 EPA 350.1 0.010 0.005 0.006/12 11:05 MEJ Ammonia as N mg/L 0.06 EPA 350.1 0.010 0.005 0.006/12 11:05 MEJ Carbonaceous BOD mg/L 2 U SM 52108 2 2 0.08/24/12 14:40 0.029/12 13:53 MEJ Chemical Oxygen Demand mg/L 120 EPA 410.4 25 10 0.027/12 14:50 0.027/112 16:55 CDB Mittale-Nittife (N) mg/L 0.01 EPA 410.4 25 10 0.027/12 14:50 0.027/112 16:55 CDB Mittale-Nittife (N) mg/L 0.01 EPA 430.2 0.04 0.01 0.027/12 14:50 0.027/112 16:35 0.027/112 16:35 0.027/112 16:35 0.027/112 16:35 0.027/112 16:35 0.027/112 16:35 0.027/112 16:35 0.027/112 16:35 0.027/112 16:35 0.027/112 16:35 0.027/112 16:35 0.027/112 16:31 0.027/112 1			08/24/12 10:50						
Hydrogen Sulfide (Unionized) mg/L 3.3 SM 4550SF 0.04 0.01 08/27/12 16:31 MEJ Ammonia as N mg/L 0.050 EPA 350.1 0.040 0.009 08/26/12 11:06 MMF Ammonium as NH4 mg/L 0.06 EPA 350.1 0.01 0.005 08/27/12 13:15 MEJ Carbonaceous BOD mg/L 2 U SM 5210B 2 2 08/24/12 14:40 08/29/12 13:53 MEJ Carbonaceous BOD mg/L 120 EPA 410.4 25 10 08/27/12 13:50 MEJ Carbonaceous BOD mg/L 120 EPA 410.4 25 10 08/27/12 13:35 08/27/12 13:50 CDB Nitrate-Nitrite (N) mg/L 0.01 I EPA 353.2 0.04 0.01 08/27/12 13:50 MEJ SUlfide mg/L 3.5 SM 4500P-E 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF SUlfide mg/L 6.8 SM 4500F-E 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF SUlfide mg/L 230 SM 2320B 8.0 2.0 08/27/12 10:30 08/27/12 08:31 MEJ TOtal Ajkalinity mg/L 230 SM 2320B 8.0 2.0 08/27/12 00:30 08/27/12 09:11 AES TOTAL SUspended Solids mg/L 4 SM 2540D 1 1 08/27/12 09:01 36/28/12 11:40 MMF SUlfide Sulfide Sulfide Mg/L 4 SM 2540D 1 1 08/27/12 09:05 08/28/12 09:13 CMS MICROBIOLOGY Fecal Coliforms CFU/100 ml 200 SM 9222D 1 1 08/27/12 15:16 08/25/12 14:15 HKG Sample Description Matrix Wastewater 120908-04 Date/Time Received 08/24/12 15:10 TA5-Denite Tank DUP Wastewater 120908-04 Date/Time Received 08/24/12 15:10 TA5-Denite Tank DUP Matrix Wastewater 120908-04 Date/Time Received 08/24/12 15:10 TA6-Denite Tank DUP Matrix Matrix Sean Schmidt 08/24/12 15:10 TOTAL Sulfide (Unionized) mg/L 2.5 SPA 350:1 0.04 0.01 0.005 08/27/12 16:31 MEJ 08/27/	-		Sean Schmidt						
Ammonia as N mg/L 0.050 EPA 350.1 0.040 0.009 08/26/12 11:06 MMF Ammonium as NH4 mg/L 0.06 EPA 350.1 0.01 0.005 08/24/12 14:10 08/27/12 13:15 MEJ Carbonaceous BOD mg/L 2 U SM 5210B 2 2 08/24/12 14:40 08/29/12 13:53 MEJ Chemical Oxygen Demand mg/L 120 EPA 410.4 25 10 08/27/12 14:50 08/27/12 16:55 CDB Nitrate-Nitrite (N) mg/L 0.01 EPA 353.2 0.04 0.01 08/27/12 14:50 08/27/12 16:55 CDB Nitrate-Nitrite (N) mg/L 0.01 EPA 353.2 0.04 0.01 08/27/12 14:50 08/27/12 11:48 MMF Phosphorous - Total as P mg/L 3.5 SM 4500P-E 0.40 0.10 0.10 08/27/12 13:35 08/28/12 11:40 MMF Phosphorous - Total as P mg/L 3.5 SM 4500P-E 0.40 0.10 0.10 08/27/12 13:31 MEJ Total Alkalinity mg/L 230 SM 2320B 8.0 2.0 08/25/12 10:00 08/27/12 09:11 AES Total Kjeldah Nitrogen mg/L 2.5 EPA 351.2 0.20 0.05 08/25/12 00:00 08/27/12 09:11 AES Total Kjeldah Nitrogen mg/L 2.5 EPA 351.2 0.20 0.05 08/27/12 09:31 08/28/12 09:13 CMS Microbiology Focal Coliforms	Date/Time Received		08/24/12 15:10						
Ammonium as NH4	Hydrogen Sulfide (Unionized)	mg/L	3.3	SM 4550SF	0.04	0.01		08/27/12 16:31	MEJ
Carbonaceous BOD mg/L 2 U SM 5210B 2 2 08/24/12 14:40 08/29/12 13:53 MEJ Chemical Oxygen Demand mg/L 120 EPA 410.4 25 10 08/27/12 14:50 08/27/12 15:55 CDB Witrate +Nitrite (N) mg/L 0.01 I EPA 353.2 0.04 0.01 08/27/12 13:35 MEJ Phosphorous - Total as P mg/L 3.5 SM 4500P-E 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Sulfide mg/L 230 SM 4500P-E 0.40 0.10 08/27/12 09:31 08/28/12 13:16 MMF Total Alkalinity mg/L 230 SM 2320B 8.0 2.0 0.05 08/27/12 09:31 08/28/12 09:13 MEJ Total Alkalinity mg/L 230 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Total Alkalinity mg/L 2.5 SM 9222D 1 1 08/24/12 15:16 08/25/12 14:15 HKG Sample Descrip	Ammonia as N	mg/L	0.050	EPA 350.1	0.040	0.009		08/26/12 11:06	MMF
Chemical Oxygen Demand mg/L 120	Ammonium as NH4	mg/L	0.06	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Nitrate+Nitrite (N) mg/L 0.01 l EPA 353.2 0.04 0.01 08/27/12 13:48 MMF Phosphorous - Total as P mg/L 3.5 SM 4500P-E 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Sulfide mg/L 6.8 SM 4500F-E 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Sulfide mg/L 230 SM 230B 8.0 2.0 08/25/12 10:00 08/27/12 09:11 AES Total Alkalinity mg/L 2.5 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 11:40 MMF Total Suspended Solids mg/L 4 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Microbiology Fecal Coliforms CFU/100 ml 200 SM 9222D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Microbiology Fecal Coliforms CFU/100 ml 200 SM 9222D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Microbiology Fecal Coliforms CFU/100 ml 200 SM 9222D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Microbiology Fecal Coliforms CFU/100 ml 200 SM 9222D 1 1 08/24/12 15:16 08/25/12 14:15 HKG Sample Description Matrix Wastewater SAL Sample Number 1209006-04 Date/Time Collected 08/24/12 15:10 Inorganics Hydrogen Sulfide (Unionized) mg/L 2.5 SM 4550SF 0.04 0.01 08/27/12 16:31 MEJ Ammonia as N mg/L 0.052 EPA 350.1 0.040 0.009 08/26/12 11:08 MMF Ammonium as NH4 mg/L 0.66 EPA 350.1 0.010 0.009 08/26/12 11:08 MMF Ammonium as NH4 mg/L 0.66 EPA 350.1 0.010 0.009 08/26/12 11:08 MMF Ammonium as NH4 mg/L 0.66 EPA 350.1 0.010 0.009 08/27/12 13:55 SM MSD Carbonaceous BOD mg/L 2 U SM 5210B 2 2 08/24/12 14:40 08/29/12 13:55 MEJ Chemical Oxygen Demand mg/L 110 EPA 410.4 25 10 08/27/12 14:50 08/27/12 16:55 CDB Nitrate+Nitrite (N) mg/L 0.01 1 EPA 353.2 0.04 0.01 08/27/12 13:55 08/28/12 13:50 MMF Sulfide mg/L 5.2 SM 4500SF 0.40 0.10 08/27/12 13:55 08/28/12 13:16 MMF Sulfide mg/L 5.2 SM 4500SF 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Sulfide mg/L 5.2 SM 4500SF 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Sulfide Mg/L 6 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 13:16 MMF Sulfide Mg/L 6 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 13:16 MMF Sulfide Mg/L 6 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 13:16 MMF Sulfide Mg/L 6 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 13:16 MMF Sulfide Mg/L 6 EPA 351.2 0.20 0.	Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	08/24/12 14:40	08/29/12 13:53	MEJ
Phosphorous - Total as P mg/L 3.5 SM 4500P-E 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Sulfide mg/L 6.8 SM 4500SF 0.40 0.10 08/27/12 16:31 MEJ Total Alkalinity mg/L 230 SM 2320B 8.0 2.0 08/25/12 10:00 08/27/12 16:31 MEJ Total Alkalinity mg/L 2.5 EPA 351.2 0.20 0.05 08/27/12 09:31 08/28/12 11:40 MMF Total Suspended Solids mg/L 4 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Microbiology Fecal Coliforms TA5-Denite Tank DUP Wastewater SAL Sample Number 1209006-04 Date/Time Collected 08/24/12 15:10 08/24/12 15:10 08/24/12 15:10 08/27/12 16:31 MEJ	Chemical Oxygen Demand	mg/L	120	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Sulfide mg/L 6.8 SM 4500SF on 0.40 0.10 08/27/12 16:31 MEJ Total Alkalinity mg/L 230 SM 2320B 8.0 2.0 08/25/12 10:00 08/27/12 09:11 AES Total Kjeldahl Nitrogen mg/L 2.5 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 09:13 CMS Microbiology Fecal Coliforms CFU/100 ml 200 SM 9222D 1 1 08/24/12 15:16 08/25/12 14:15 HKG Sample Description TA5-Denite Tank DUP Watrix Wastewater SAL Sample Number 1209006-04 Sean Schmidt Date/Time Received 08/24/12 15:10 National Sample (Unionized) mg/L 2.5 SM 4550SF 0.04 0.01 08/27/12 16:31 MEJ Inorganics Hydrogen Sulfide (Unionized) mg/L 2.5 SM 4550SF 0.04 0.01 0.02/27/12 16:31 MEJ Marmonia as N mg/L	Nitrate+Nitrite (N)	mg/L	0.01 I	EPA 353.2	0.04	0.01		08/27/12 11:48	MMF
Total Alkalinity	Phosphorous - Total as P	mg/L	3.5	SM 4500P-E	0.40	0.10	08/27/12 13:35	08/28/12 13:16	MMF
Total Kjeldahl Nitrogen mg/L 2.5 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 11:40 MMF Total Suspended Solids mg/L 4 SM 2540D 1 1 0 08/27/12 09:55 08/28/12 09:13 CMS Microbiology Fecal Coliforms	Sulfide	mg/L	6.8	SM 4500SF	0.40	0.10		08/27/12 16:31	MEJ
Total Suspended Solids mg/L 4 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Microbiology Fecal Coliforms CFU/100 ml 200 SM 9222D 1 1 0 08/24/12 15:16 08/25/12 14:15 HKG Sample Description Matrix Wastewater SAL Sample Number 1209006-04 Date/Time Collected 08/24/12 10:55 Collected by Sean Schmidt Date/Time Received 08/24/12 15:10 Inorganics Hydrogen Sulfide (Unionized) mg/L 2.5 SM 4550SF 0.04 0.01 08/27/12 16:31 MEJ Ammonia as N mg/L 0.052 EPA 350.1 0.040 0.009 08/26/12 11:08 MMF Ammonium as NH4 mg/L 0.66 EPA 350.1 0.01 0.005 08/27/12 13:15 MEJ Carbonaceous BOD mg/L 2 U SM 5210B 2 2 08/24/12 14:40 08/29/12 13:53 MEJ Chemical Oxygen Demand mg/L 110 EPA 410.4 25 10 08/27/12 14:50 08/27/12 16:55 CDB Ultrate+Nitrite (N) mg/L 0.01 I EPA 410.4 25 10 08/27/12 14:50 08/27/12 16:55 CDB Ultrate+Nitrite (N) mg/L 3.7 SM 4500FE 0.40 0.01 08/27/12 13:35 08/27/12 11:60 MMF Phosphorous - Total as P mg/L 3.7 SM 4500FE 0.40 0.10 08/27/12 13:35 08/27/12 13:16 MMF Sulfide mg/L 5.2 SM 4500SF 0.40 0.10 08/27/12 13:35 08/27/12 16:31 MEJ Total Alkalinity mg/L 220 SM 230DB 8.0 2.0 08/25/12 0:00 08/27/12 08:31 08/28/12 13:16 MMF Total Suspended Solids mg/L 6 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:11 AES Microbiology	Total Alkalinity	mg/L	230	SM 2320B	8.0	2.0	08/25/12 10:00	08/27/12 09:11	AES
Microbiology Fecal Coliforms CFU/100 ml 200 SM 9222D 1 1 08/24/12 15:16 08/25/12 14:15 HKG Sample Description Matrix TA5-Denite Tank DUP Matrix Wastewater SAL Sample Number 1209006-04 <td>Total Kjeldahl Nitrogen</td> <td>mg/L</td> <td>2.5</td> <td>EPA 351.2</td> <td>0.20</td> <td>0.05</td> <td>08/27/12 08:31</td> <td>08/28/12 11:40</td> <td>MMF</td>	Total Kjeldahl Nitrogen	mg/L	2.5	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 11:40	MMF
TA5-Denite Tank DUP Sample Description	Total Suspended Solids	mg/L	4	SM 2540D	1	1	08/27/12 09:55	08/28/12 09:13	CMS
Sample Description Matrix Wastewater SAL Sample Number 1209006-04 Date/Time Collected 08/24/12 10:55 Collected by Sean Schmidt Date/Time Received 08/24/12 15:10 Sean Schmidt Date/Time Received 08/24/12 15:10 Sean Schmidt Date/Time Received 08/24/12 15:10 Sean Schmidt Date/Time Received 08/24/12 15:10 Sean Schmidt Date/Time Received 08/24/12 15:10 Sean Schmidt Date/Time Received 08/24/12 15:10 Sean Schmidt Date/Time Received 08/24/12 15:10 Sean Schmidt Date/Time Received 08/24/12 15:10 Sean Schmidt Date/Time Received 08/24/12 15:10 Sean Schmidt Date/Time Received 08/24/12 15:10 Sean Schmidt Date/Time Received 08/24/12 15:10 Sean Schmidt Date/Time Received 08/24/12 15:10 Sean Schmidt Date/Time Received 08/24/12 16:31 MEJ Date/Time Received 08/24/12 13:25 MEJ Date/Time Received 08/24/12 13:25 MeJ Date/Time Received 08/24/12 13:25 MeJ Date/Time Received 08/24/12 13:25 MeJ Date/Time Received 08/24/12 13:25 MeJ Date/Time Received 08/24/12 13:25 MeJ Date/Time Received 08/24/12 13:25 MeJ Date/Time Received 08/24/12 13:25 MeJ Date/Time Received 08/24/12 13:25 MeJ Date/Time Received 08/24/12 13:25 MeJ Date/Time Received 08/24/12 13:25 MeJ Date/Time Received 08/24/12 13:25 MeJ Date/Time Received 08/24/12 13:25 MeJ Date/Time Received 08/24/12 13:25 Date/Ti	Microbiology								
Matrix Wastewater SAL Sample Number 1209006-04 Date/Time Collected 08/24/12 10:55 Collected by Sean Schmidt Date/Time Received 08/24/12 15:10 Inorganics Hydrogen Sulfide (Unionized) mg/L 2.5 SM 4550SF 0.04 0.01 08/27/12 16:31 MEJ Ammonia as N mg/L 0.052 EPA 350.1 0.040 0.009 08/26/12 11:08 MMF Ammonium as NH4 mg/L 0.66 EPA 350.1 0.01 0.005 08/27/12 13:15 MEJ Carbonaceous BOD mg/L 2 U SM 5210B 2 2 08/24/12 14:40 08/29/12 13:53 MEJ Chemical Oxygen Demand mg/L 110 EPA 410.4 25 10 08/27/12 14:50 08/27/12 16:55 CDB Nitrate+Nitrite (N) mg/L 0.01 EPA 353.2 0.04 0.01 08/27/12 13:50 MMF Phosphorous - Total as P mg/L 3.7 SM 4500F 0.40	Fecal Coliforms	CFU/100 ml	200	SM 9222D	1	1	08/24/12 15:16	08/25/12 14:15	HKG
Matrix Wastewater SAL Sample Number 1209006-04 Date/Time Collected 08/24/12 10:55 Collected by Sean Schmidt Date/Time Received 08/24/12 15:10 Inorganics Hydrogen Sulfide (Unionized) mg/L 2.5 SM 4550SF 0.04 0.01 08/27/12 16:31 MEJ Ammonia as N mg/L 0.052 EPA 350.1 0.040 0.009 08/26/12 11:08 MMF Ammonium as NH4 mg/L 0.66 EPA 350.1 0.01 0.005 08/27/12 13:15 MEJ Carbonaceous BOD mg/L 2 U SM 5210B 2 2 08/24/12 14:40 08/29/12 13:53 MEJ Chemical Oxygen Demand mg/L 110 EPA 410.4 25 10 08/27/12 14:50 08/27/12 16:55 CDB Nitrate+Nitrite (N) mg/L 0.01 EPA 353.2 0.04 0.01 08/27/12 13:50 MMF Phosphorous - Total as P mg/L 3.7 SM 4500F 0.40									
SAL Sample Number			TA5-Denite Tank DUP						
Date/Time Collected by Sean Schmidt Date/Time Received Sean Schmidt Date/Time Received 08/24/12 15:10									
Collected by Date/Time Received 08/24/12 15:10 Norganics Hydrogen Sulfide (Unionized) mg/L 2.5 SM 4550SF 0.04 0.01 0.005/21/12 16:31 MEJ	•								
Date/Time Received D8/24/12 15:10 Simple Received D8/24/12 15:10 Simple Received D8/24/12 15:10 Simple Received D8/24/12 15:10 Simple Received D8/24/12 15:10 Simple Received D8/24/12 15:10 Simple Received D8/24/12 16:31 MEJ D8/27/12 16:31 MEJ D8/27/12 16:31 MEJ D8/27/12 16:31 MEJ D8/27/12 13:15 MEJ D8/27/12 13:15 MEJ D8/27/12 13:15 MEJ D8/27/12 13:15 MEJ D8/27/12 13:15 MEJ D8/27/12 13:15 MEJ D8/27/12 13:15 MEJ D8/27/12 13:15 D8/27/12 13:15 MEJ D8/27/12 13:15 D8/27/1									
Inorganics Hydrogen Sulfide (Unionized) mg/L 2.5 SM 4550SF 0.04 0.01 0.009 0	•								
Hydrogen Sulfide (Unionized) mg/L 2.5 SM 4550SF 0.04 0.01 08/27/12 16:31 MEJ Ammonia as N mg/L 0.052 EPA 350.1 0.040 0.009 08/26/12 11:08 MMF Ammonium as NH4 mg/L 0.66 EPA 350.1 0.01 0.005 08/27/12 13:15 MEJ Carbonaceous BOD mg/L 2 U SM 5210B 2 2 08/24/12 14:40 08/29/12 13:53 MEJ Chemical Oxygen Demand mg/L 110 EPA 410.4 25 10 08/27/12 14:50 08/27/12 16:55 CDB Nitrate+Nitrite (N) mg/L 0.01 I EPA 353.2 0.04 0.01 08/27/12 11:50 MMF Phosphorous - Total as P mg/L 3.7 SM 4500P-E 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Sulfide mg/L 5.2 SM 4500SF 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Total Alkalinity mg/L 2.4 EPA 351.2	Date/Time Received		08/24/12 15:10						
Ammonia as N mg/L 0.052 EPA 350.1 0.040 0.009 08/26/12 11:08 MMF Ammonium as NH4 mg/L 0.66 EPA 350.1 0.01 0.005 08/27/12 13:15 MEJ Carbonaceous BOD mg/L 2 U SM 5210B 2 2 08/24/12 14:40 08/29/12 13:53 MEJ Chemical Oxygen Demand mg/L 110 EPA 410.4 25 10 08/27/12 14:50 08/27/12 16:55 CDB Nitrate+Nitrite (N) mg/L 0.01 I EPA 353.2 0.04 0.01 08/27/12 11:50 MMF Phosphorous - Total as P mg/L 3.7 SM 4500P-E 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Sulfide mg/L 5.2 SM 4500SF 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Total Alkalinity mg/L 220 SM 2320B 8.0 2.0 08/25/12 10:00 08/27/12 09:11 AES Total Kjeldahl Nitrogen mg/L 6 SM 2540D 1	Inorganics								
Ammonium as NH4 mg/L 0.66 EPA 350.1 0.01 0.005 08/27/12 13:15 MEJ Carbonaceous BOD mg/L 2 U SM 5210B 2 2 08/24/12 14:40 08/29/12 13:53 MEJ Chemical Oxygen Demand mg/L 110 EPA 410.4 25 10 08/27/12 14:50 08/27/12 16:55 CDB Nitrate+Nitrite (N) mg/L 0.01 I EPA 353.2 0.04 0.01 08/27/12 11:50 MMF Phosphorous - Total as P mg/L 3.7 SM 4500P-E 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Sulfide mg/L 5.2 SM 4500SF 0.40 0.10 08/27/12 16:31 MEJ Total Alkalinity mg/L 220 SM 2320B 8.0 2.0 08/25/12 10:00 08/27/12 09:11 AES Total Kjeldahl Nitrogen mg/L 2.4 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 11:42 MMF Total Suspended Solids mg/L 6 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Microbiology	Hydrogen Sulfide (Unionized)	mg/L	2.5	SM 4550SF	0.04	0.01		08/27/12 16:31	MEJ
Carbonaceous BOD mg/L 2 U SM 5210B 2 2 08/24/12 14:40 08/29/12 13:53 MEJ Chemical Oxygen Demand mg/L 110 EPA 410.4 25 10 08/27/12 14:50 08/27/12 16:55 CDB Nitrate+Nitrite (N) mg/L 0.01 I EPA 353.2 0.04 0.01 08/27/12 11:50 MMF Phosphorous - Total as P mg/L 3.7 SM 4500P-E 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Sulfide mg/L 5.2 SM 4500SF 0.40 0.10 08/27/12 16:31 MEJ Total Alkalinity mg/L 220 SM 2320B 8.0 2.0 08/25/12 10:00 08/27/12 09:11 AES Total Kjeldahl Nitrogen mg/L 2.4 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 11:42 MMF Total Suspended Solids mg/L 6 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:13 CMS	Ammonia as N	mg/L	0.052	EPA 350.1	0.040	0.009		08/26/12 11:08	MMF
Chemical Oxygen Demand mg/L 110 EPA 410.4 25 10 08/27/12 14:50 08/27/12 16:55 CDB Nitrate+Nitrite (N) mg/L 0.01 I EPA 353.2 0.04 0.01 08/27/12 13:50 MMF Phosphorous - Total as P mg/L 3.7 SM 4500P-E 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Sulfide mg/L 5.2 SM 4500SF 0.40 0.10 08/27/12 16:31 MEJ Total Alkalinity mg/L 220 SM 2320B 8.0 2.0 08/25/12 10:00 08/27/12 09:11 AES Total Kjeldahl Nitrogen mg/L 2.4 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 11:42 MMF Total Suspended Solids mg/L 6 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Microbiology	Ammonium as NH4	mg/L	0.66	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Nitrate+Nitrite (N) mg/L 0.01 I EPA 353.2 0.04 0.01 08/27/12 11:50 MMF Phosphorous - Total as P mg/L 3.7 SM 4500P-E 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Sulfide mg/L 5.2 SM 4500SF 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Total Alkalinity mg/L 220 SM 2320B 8.0 2.0 08/25/12 10:00 08/27/12 09:11 AES Total Kjeldahl Nitrogen mg/L 2.4 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 11:42 MMF Total Suspended Solids mg/L 6 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Microbiology	Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	08/24/12 14:40	08/29/12 13:53	MEJ
Phosphorous - Total as P mg/L 3.7 SM 4500P-E 0.40 0.10 08/27/12 13:35 08/28/12 13:16 MMF Sulfide mg/L 5.2 SM 4500SF 0.40 0.10 08/27/12 16:31 MEJ Total Alkalinity mg/L 220 SM 2320B 8.0 2.0 08/25/12 10:00 08/27/12 09:11 AES Total Kjeldahl Nitrogen mg/L 2.4 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 11:42 MMF Total Suspended Solids mg/L 6 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Microbiology	Chemical Oxygen Demand	mg/L	110	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Sulfide mg/L 5.2 SM 4500SF 0.40 0.10 08/27/12 16:31 MEJ Total Alkalinity mg/L 220 SM 2320B 8.0 2.0 08/25/12 10:00 08/27/12 09:11 AES Total Kjeldahl Nitrogen mg/L 2.4 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 11:42 MMF Total Suspended Solids mg/L 6 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Microbiology	Nitrate+Nitrite (N)	mg/L	0.01 I	EPA 353.2	0.04	0.01		08/27/12 11:50	MMF
Sulfide mg/L 5.2 SM 4500SF 0.40 0.10 08/27/12 16:31 MEJ Total Alkalinity mg/L 220 SM 2320B 8.0 2.0 08/25/12 10:00 08/27/12 09:11 AES Total Kjeldahl Nitrogen mg/L 2.4 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 11:42 MMF Total Suspended Solids mg/L 6 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Microbiology	Phosphorous - Total as P	mg/L	3.7	SM 4500P-E	0.40	0.10	08/27/12 13:35	08/28/12 13:16	MMF
Total Alkalinity mg/L 220 SM 2320B 8.0 2.0 08/25/12 10:00 08/27/12 09:11 AES Total Kjeldahl Nitrogen mg/L 2.4 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 11:42 MMF Total Suspended Solids mg/L 6 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Microbiology			5.2	SM 4500SF	0.40	0.10		08/27/12 16:31	MEJ
Total Kjeldahl Nitrogen mg/L 2.4 EPA 351.2 0.20 0.05 08/27/12 08:31 08/28/12 11:42 MMF Total Suspended Solids mg/L 6 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:13 CMS Microbiology CMS Microbiology 0.20 0.05 08/27/12 09:55 08/28/12 09:13 CMS	Total Alkalinity		220	SM 2320B	8.0	2.0	08/25/12 10:00	08/27/12 09:11	AES
Total Suspended Solids mg/L 6 SM 2540D 1 1 08/27/12 09:55 08/28/12 09:13 CMS <u>Microbiology</u>	Total Kjeldahl Nitrogen		2.4	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 11:42	MMF
		mg/L	6	SM 2540D	1	1	08/27/12 09:55	08/28/12 09:13	CMS
	Microbiology								
	•	CFU/100 ml	260	SM 9222D	1	1	08/24/12 15:16	08/25/12 14:15	HKG

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 18, 2012 Work Order: 1209006

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
				01110	20101	rtoodit	701.120		5	
Batch BH22114 - Digestion fo	or TP by EPA 36	55.2/SM4500	PE							
Blank (BH22114-BLK1)					Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22114-BS1)					Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	0.822	0.040	0.010	mg/L	0.80		103	90-110		
Matrix Spike (BH22114-MS1)		Source: 1	209304-02		Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	1.08	0.040	0.010	mg/L	1.0	0.0385	104	75-125		
Matrix Spike Dup (BH22114-MSD	1)	Source: 1	209304-02		Prepared:	08/21/12 Ar	nalyzed: 08	/22/12		
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0385	98	75-125	6	25
Batch BH22118 - COD prep										
Blank (BH22118-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH22118-BS1)					Prepared 8	& Analyzed:	08/21/12			
Chemical Oxygen Demand	47	25	10	mg/L	50		94	90-110		
Matrix Spike (BH22118-MS1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/21/12			
Chemical Oxygen Demand	47	25	10	mg/L	50	ND	94	85-115		
Matrix Spike Dup (BH22118-MSD	1)	Source: 1	209008-03		Prepared 8	& Analyzed:	08/21/12			
Chemical Oxygen Demand	49	25	10	mg/L	50	ND	98	85-115	4	32
Batch BH22122 - Ammonia b	y SEAL									
Blank (BH22122-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
				-						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 18, 2012 Work Order: 1209006

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22122 - Ammonia by	SEAL									
LCS (BH22122-BS1)					Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.54	0.040	0.009	mg/L	0.50		108	90-110		
Matrix Spike (BH22122-MS1)		Source: 1	209008-01		Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.52	0.040	0.009	mg/L	0.50	ND	104	90-110		
Matrix Spike Dup (BH22122-MSD1	l)	Source: 1	209008-01		Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	103	90-110	2	10
Batch BH22131 - Sulfide prep										
Blank (BH22131-BLK1)					Prepared 8	& Analyzed:	08/20/12			
Sulfide	0.10 U	0.40	0.10	mg/L						
LCS (BH22131-BS1)					Prepared 8	& Analyzed:	08/20/12			
Sulfide	5.03	0.40	0.10	mg/L	5.0		101	85-115		
Matrix Spike (BH22131-MS1)		Source: 1	209143-02		Prepared 8	& Analyzed:	08/20/12			
Sulfide	5.23	0.40	0.10	mg/L	5.0	ND	105	85-115		
Matrix Spike Dup (BH22131-MSD1	1)	Source: 1	209143-02		Prepared 8	& Analyzed:	08/20/12			
Sulfide	5.23	0.40	0.10	mg/L	5.0	ND	105	85-115	0	14
Batch BH22136 - alkalinity										
Blank (BH22136-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 18, 2012 Work Order: 1209006

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
, mary to	rtoodit			Onito	20101	rtocait	701120	Liiiito	111 12	
Batch BH22136 - alkalinity										
Blank (BH22136-BLK2)					Prepared 8	k Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22136-BS1)					Prepared 8	k Analyzed:	08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
LCS (BH22136-BS2)					Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22136-MS1)		Source: 1	209336-06		Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120		
Matrix Spike (BH22136-MS2)		Source: 1	209336-07		Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	250	8.0	2.0	mg/L	120	140	86	80-120		
Matrix Spike Dup (BH22136-MSD1)		Source: 1	209336-06		Prepared 8	k Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	0	26
Matrix Spike Dup (BH22136-MSD2)		Source: 1	209336-07		Prepared 8	k Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	4	26
Batch BH22141 - Digestion for 1	TKN by EPA	351.2								
Blank (BH22141-BLK1)					Prepared: (08/21/12 Ar	nalyzed: 08/	23/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22141-BS1)					Prepared: (08/21/12 Ar	nalyzed: 08/	23/12		
Total Kjeldahl Nitrogen	2.41	0.20	0.05	mg/L	2.5		95	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 18, 2012 Work Order: 1209006

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22141 - Digestion fo	or TKN by EPA	351.2								
Matrix Spike (BH22141-MS1)		Source: 1	209356-07		Prepared:	08/21/12 Ar	nalyzed: 08/	23/12		
Total Kjeldahl Nitrogen	3.31	0.20	0.05	mg/L	2.5	0.450	113	80-120		
Matrix Spike Dup (BH22141-MSD) 1)	Source: 1	209356-07		Prepared:	08/21/12 Ar	nalyzed: 08/	23/12		
Total Kjeldahl Nitrogen	2.96	0.20	0.05	mg/L	2.5	0.450	99	80-120	11	20
Batch BH22207 - Nitrate 353.	2 by seal									
Blank (BH22207-BLK1)					Prepared 8	Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22207-BS1)					Prepared 8	Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.802	0.04	0.01	mg/L	0.80		100	90-110		
Matrix Spike (BH22207-MS1)		Source: 1	209008-01		Prepared 8	Analyzed:	08/22/12			
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0281	106	77-119		
Matrix Spike Dup (BH22207-MSD	01)	Source: 1	209008-01		Prepared 8	Analyzed:	08/22/12			
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0281	106	77-119	0.2	20
Batch BH22212 - Ion Chroma	tography 300.0	Prep								
Blank (BH22212-BLK1)					Prepared 8	Analyzed:	08/23/12			
Sulfate	0.20 U	0.60	0.20	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH22212-BS1)					Prepared 8	Analyzed:	08/23/12			
Sulfate	8.89	0.60	0.20	mg/L	9.0		99	85-115		
Chloride	2.89	0.20	0.050	mg/L	3.0		96	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 18, 2012 Work Order: 1209006

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22212 - Ion Chromat	ography 300.0	Prep								
LCS Dup (BH22212-BSD1)					Prepared 8	& Analyzed:	08/23/12			
Sulfate	8.82	0.60	0.20	mg/L	9.0		98	85-115	0.8	200
Chloride	2.88	0.20	0.050	mg/L	3.0		96	85-115	0.3	200
Matrix Spike (BH22212-MS1)		Source: 1	209013-04		Prepared 8	k Analyzed:	08/23/12			
Sulfate	64.5	0.60	0.20	mg/L	9.0	55.2	103	85-115		
Chloride	16.5	0.20	0.050	mg/L	3.0	13.5	100	80-120		
Matrix Spike (BH22212-MS2)		Source: 1	209013-17		Prepared 8	k Analyzed:	08/23/12			
Chloride	17.8	0.20	0.050	mg/L	3.0	15.1	90	80-120		
Sulfate	66.8	0.60	0.20	mg/L	9.0	58.7	90	85-115		
Batch BH22233 - BOD										
Blank (BH22233-BLK1)					Prepared: (08/22/12 Ar	nalyzed: 08	27/12		
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BH22233-BS1)					Prepared: (08/22/12 Ar	nalyzed: 08	27/12		
Carbonaceous BOD	172	2	2	mg/L	200		86	85-115		
LCS Dup (BH22233-BSD1)					Prepared: (08/22/12 Ar	nalyzed: 08	27/12		
Carbonaceous BOD	196	2	2	mg/L	200		98	85-115	13	200
Duplicate (BH22233-DUP1)		Source: 1	209356-01		Prepared: (08/22/12 Ar	nalyzed: 08	27/12		
Carbonaceous BOD	280	2	2	mg/L		270			5	25
Batch BH22444 - BOD										
Blank (BH22444-BLK1)					Prepared: (08/24/12 Ar	nalyzed: 08	29/12		
Carbonaceous BOD	2 U	2	2	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 18, 2012 Work Order: 1209006

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22444 - BOD										
Blank (BH22444-BLK2)					Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BH22444-BS1)					Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	190	2	2	mg/L	200		95	85-115		
LCS (BH22444-BS2)					Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	181	2	2	mg/L	200		90	85-115		
LCS Dup (BH22444-BSD1)					Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	184	2	2	mg/L	200		92	85-115	3	200
LCS Dup (BH22444-BSD2)					Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	180	2	2	mg/L	200		90	85-115	0.8	200
Duplicate (BH22444-DUP1)		Source: 1	209566-01		Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	140	2	2	mg/L		150			7	25
Duplicate (BH22444-DUP2)		Source: 1	209571-01		Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	150	2	2	mg/L		180			19	25
Batch BH22504 - alkalinity										
Blank (BH22504-BLK1)					Prepared: (08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22504-BS1)					Prepared: (08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 18, 2012 Work Order: 1209006

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22504 - alkalinity										
Matrix Spike (BH22504-MS1)		Source: 1	209007-03		Prepared: (08/25/12 Ar	nalyzed: 08/	/27/12		
Total Alkalinity	290	8.0	2.0	mg/L	120	170	95	80-120		
Matrix Spike Dup (BH22504-MSD1)		Source: 1	209007-03		Prepared: (08/25/12 Ar	nalyzed: 08/	/27/12		
Total Alkalinity	290	8.0	2.0	mg/L	120	170	95	80-120	0	26
Batch BH22601 - Ammonia by	SEAL									
Blank (BH22601-BLK1)					Prepared 8	& Analyzed:	08/26/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22601-BS1)					Prepared 8	k Analyzed:	08/26/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		97	90-110		
Matrix Spike (BH22601-MS1)		Source: 1	209380-04		Prepared 8	& Analyzed:	08/26/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.032	94	90-110		
Matrix Spike Dup (BH22601-MSD1))	Source: 1	209380-04		Prepared 8	k Analyzed:	08/26/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.032	93	90-110	2	10
Batch BH22701 - Digestion for	TKN by EPA	351.2								
Blank (BH22701-BLK1)					Prepared: (08/27/12 Ar	nalyzed: 08/	/28/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22701-BS1)					Prepared: (08/27/12 Ar	nalyzed: 08/	/28/12		
Total Kjeldahl Nitrogen	2.65	0.20	0.05	mg/L	2.5	<u> </u>	105	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 18, 2012 Work Order: 1209006

Analyta	Daguit	DOL	MDL	Llmita	Spike	Source	0/ DEC	%REC	DDD	RPD
Analyte	Result	PQL	IVIDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22701 - Digestion for	or TKN by EPA	351.2								
Matrix Spike (BH22701-MS1)		Source: 1	208987-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	7.94	0.20	0.05	mg/L	2.5	5.56	94	80-120		
Matrix Spike Dup (BH22701-MSD	01)	Source: 1	208987-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	8.31	0.20	0.05	mg/L	2.5	5.56	108	80-120	4	20
Batch BH22704 - Nitrate 353.	2 by seal									
Blank (BH22704-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22704-BS1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.786	0.04	0.01	mg/L	0.80		98	90-110		
Matrix Spike (BH22704-MS1)		Source: 1	209016-21		Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	12.4	0.40	0.10	mg/L	10	2.55	99	77-119		
Matrix Spike Dup (BH22704-MSD	01)	Source: 1	209016-21		Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	12.7	0.40	0.10	mg/L	10	2.55	102	77-119	2	20
Batch BH22709 - TSS prep										
Blank (BH22709-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BH22709-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Suspended Solids	54.8	1	1	mg/L	50		110	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 18, 2012 Work Order: 1209006

A 1.	D "	DOI	MDI		Spike	Source	0/ DE0	%REC	DDD	RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22709 - TSS prep										
Duplicate (BH22709-DUP1)		Source: 1	209495-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Suspended Solids	162	1	1	mg/L		173			7	30
Duplicate (BH22709-DUP2)		Source: 1	209520-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Suspended Solids	84.0	1	1	mg/L		88.0			5	30
Batch BH22711 - COD prep										
Blank (BH22711-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH22711-BS1)					Prepared 8	k Analyzed:	08/27/12			
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BH22711-MS1)		Source: 1	209016-05		Prepared 8	& Analyzed:	08/27/12			
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115		
Matrix Spike Dup (BH22711-MSD1)	Source: 1	209016-05		Prepared 8	k Analyzed:	08/27/12			
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115	0	32
Batch BH22721 - Digestion for	r TP by EPA 36	5.2/SM450	0PE							
Blank (BH22721-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22721-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Phosphorous - Total as P	0.790	0.040	0.010	mg/L	0.80		99	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 18, 2012 Work Order: 1209006

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22721 - Digestion for	TP by EPA 36	5.2/SM4500	PE							
Matrix Spike (BH22721-MS1)		Source: 1	209020-09		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0702	95	75-125		
Matrix Spike Dup (BH22721-MSD1)		Source: 1	209020-09		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0702	95	75-125	0.3	25
Batch BH22745 - Sulfide prep										
Blank (BH22745-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Sulfide	0.10 U	0.40	0.10	mg/L						
LCS (BH22745-BS1)					Prepared 8	& Analyzed:	08/27/12			
Sulfide	5.23	0.40	0.10	mg/L	5.0		105	85-115		
Matrix Spike (BH22745-MS1)		Source: 1	209674-02		Prepared 8	& Analyzed:	08/27/12			
Sulfide	5.43	0.40	0.10	mg/L	5.0	0.910	90	85-115		
Matrix Spike Dup (BH22745-MSD1)		Source: 1	209674-02		Prepared 8	& Analyzed:	08/27/12			
Sulfide	5.43	0.40	0.10	mg/L	5.0	0.910	90	85-115	0	14

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 18, 2012 Work Order: 1209006

Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22046 - FC-MF										
Blank (BH22046-BLK1)					Prepared:	08/20/12 Ar	nalyzed: 08	/21/12		
Fecal Coliforms	1 U	1	1	CFU/100 r	nl					
Duplicate (BH22046-DUP1)		Source: 1	209006-	01	Prepared:	08/20/12 Ar	nalyzed: 08	/21/12		
Fecal Coliforms	1 U	1	1	CFU/100 r	nl	ND				200
Batch BH22446 - FC-MF										
Blank (BH22446-BLK1)					Prepared:	08/24/12 Ar	nalyzed: 08	/25/12		
Fecal Coliforms	1 U	1	1	CFU/100 r	nl					
Duplicate (BH22446-DUP1)		Source: 1	209006-	03	Prepared:	08/24/12 Ar	nalyzed: 08	/25/12		
Fecal Coliforms	290	1	1	CFU/100 r	nl	200			37	200

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 18, 2012 Work Order: 1209006

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

Finder



SOUTHERN ANALYTICAL LABORATORIES, INC. 110BAYVIEW BOULEVARD, OLD SMAR, FL 34677 813-855-1844 fax 813-855-2218

Clien	Client Name	Hazen	Hazen and Sawver									Contact / Phone:	Phone:	į						
Proje	Project Name / Location																			
-		SEGW	S&GW Lett Facility SE#2	y SE#2									!							
Samp	Samplers: (Signature)		2/		1					PAI	PARAMETER / CONTAINER DESCRIPTION	₹/ CONTA	INER DE	SCRIPTIC	N O					
	Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water	Vastewater 3e SO-Soil /ater O-Other					SO ₄ H14, COD, TP	linity, CBOD,	Sn Acetate									!		
	Sample Description	ption	Date	əmi⊺	xintsM	Composite Grab	1 ТКИ' ИО×' И ТКИ' ИО×' И	1LP, Cool	1LP, NaOH, 7 R ₂ H	125mL P, Na						00	Hq	Conductivity	Temperature	No. of Conta per each loc
6	TA5-LY-C		8 30 14 13:30	13:30	GW.	×	-	-	-	2						5.9	b.4	623	35.3	មា
02	TAS-LINER-SP		C82#2/145	1145	M	×	0	र्भ	502	7						5-5		4. 6986 35.2	33.2	
8	TA5-Denite Tank			050	W	×	-		-	2						0.1	7.0	7.0 90918.4	18.4	
2	04 TA5-Denite Tank DUP			1095	ww	×		1	1	2						ō	7,0	308	78.4	
						 														
															+					
														-						
Contair Refinqu	Containers Prepared/ Relinquished:	1	Received:	W.	m	Date/Time:		1915		Seal intact?	ct?			⊘ z ≻	<u>@</u>					
Relinquished:	Town or the second	Date/Timb/Sco	R. B.			Date/Time:	15. 30.	54		Samples	Samples intact upon arrival? Received on ice? Temp	arrival? mp	-		4 4					
Relinquished	shed:	Date/Time:	Received:			Date/Time:		-		Proper pr	Proper preservatives indicated?	s indicated?		§ ≥ ∑ O						
Relinquished	shed:	Date/Time:	Received:			Date/Time	<u></u>			Rec'd wi	Rec'd within holding time? Volatiles rec'd w/out headspace?	time? headspace		N N N N N N N N N N N N N N N N N N N	« A					
Relinquished	shed:	Date/Time:	Received:			Date/Time:	 			Proper co	Proper containers used?	¿pa;	•	z Z					Ì	1209006
Chain of Custody. vis Rev.Date 11/19/01	stody. 4s 1/19/01													Chain	Chain of Custody	<u>></u>				

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209674

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA5-LINER-SP						
Matrix		Groundwater						
SAL Sample Number		1209674-01						
Date/Time Collected		08/27/12 08:45						
Collected by		Josephine Edeback	-Hirst					
Date/Time Received		08/27/12 12:40						
<u>Inorganics</u>								
Hydrogen Sulfide (Unionized)	mg/L	0.70	SM 4550SF	0.04	0.01		08/27/12 16:31	ME
Ammonia as N	mg/L	0.37	EPA 350.1	0.040	0.009		08/30/12 15:43	MMF
Ammonium as NH4	mg/L	0.47	EPA 350.1	0.01	0.005		09/07/12 14:45	MMF
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	08/27/12 13:41	09/01/12 11:00	ME
Chemical Oxygen Demand	mg/L	120	EPA 410.4	25	10	09/04/12 12:30	09/04/12 14:45	CDE
Chloride	mg/L	49	EPA 300.0	0.20	0.050		09/05/12 09:17	JAC
Nitrate+Nitrite (N)	mg/L	5.9	EPA 353.2	0.40	0.10		08/31/12 11:49	MMF
Phosphorous - Total as P	mg/L	3.0	SM 4500P-E	0.20	0.050	08/27/12 13:57	08/31/12 12:32	MMF
Sulfate	mg/L	35	EPA 300.0	0.60	0.20		09/05/12 09:17	JAC
Sulfide	mg/L	0.91	SM 4500SF	0.40	0.10		08/27/12 16:31	ME
Total Alkalinity	mg/L	240	SM 2320B	8.0	2.0	08/29/12 10:00	08/29/12 16:46	AES
Total Kjeldahl Nitrogen	mg/L	5.7	EPA 351.2	0.20	0.05	08/28/12 14:06	09/04/12 14:54	MMF
Total Suspended Solids	mg/L	6	SM 2540D	1	1	08/30/12 09:09	08/30/12 15:35	CMS
Microbiology								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	08/27/12 13:45	08/28/12 12:41	HKG
Sample Description		TA6-LINER-SP						
Matrix		Groundwater						

Matrix		Giodilawatei						
SAL Sample Number		1209674-02						
Date/Time Collected		08/27/12 08:30						
Collected by		Josephine Edeback-F	lirst					
Date/Time Received		08/27/12 12:40						
<u>Inorganics</u>								
Hydrogen Sulfide (Unionized)	mg/L	0.70	SM 4550SF	0.04	0.01		08/27/12 16:31	MEJ
Ammonia as N	mg/L	0.57	EPA 350.1	0.040	0.009		08/30/12 15:44	MMF
Ammonium as NH4	mg/L	0.73	EPA 350.1	0.01	0.005		09/07/12 14:45	MMF
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	08/27/12 13:41	09/01/12 11:00	MEJ
Chemical Oxygen Demand	mg/L	130	EPA 410.4	25	10	09/04/12 12:30	09/04/12 14:45	CDB
Chloride	mg/L	49	EPA 300.0	0.20	0.050		09/05/12 09:17	JAG
Nitrate+Nitrite (N)	mg/L	2.8	EPA 353.2	0.40	0.10		08/31/12 11:50	MMF
Phosphorous - Total as P	mg/L	3.6	SM 4500P-E	0.20	0.050	08/27/12 13:57	08/31/12 12:32	MMF
Sulfate	mg/L	35	EPA 300.0	0.60	0.20		09/05/12 09:17	JAG
Sulfide	mg/L	0.91	SM 4500SF	0.40	0.10		08/27/12 16:31	MEJ
Total Alkalinity	mg/L	230	SM 2320B	8.0	2.0	08/29/12 10:00	08/29/12 16:46	AES

Total Kjeldahl Nitrogen

Total Suspended Solids

Microbiology

mg/L

mg/L

09/04/12 14:56

MMF

CMS

6.3

2

EPA 351.2

SM 2540D

0.20

1

0.05

1

08/28/12 14:06

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209674

Laboratory Report

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description	TA	A6-LINER-SP						
Matrix	G	roundwater						
SAL Sample Number	12	209674-02						
Date/Time Collected	08	3/27/12 08:30						
Collected by	Jo	sephine Edeback	-Hirst					
Date/Time Received	08	8/27/12 12:40						
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	08/27/12 13:45	08/28/12 12:41	HKG

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209674

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22722 - BOD										
Blank (BH22722-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 09/	01/12		
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BH22722-BS1)					Prepared:	08/27/12 Ar	nalyzed: 09/	01/12		
Carbonaceous BOD	197	2	2	mg/L	200		98	85-115		
LCS Dup (BH22722-BSD1)					Prepared:	08/27/12 Ar	nalyzed: 09/	01/12		
Carbonaceous BOD	198	2	2	mg/L	200		99	85-115	8.0	200
Duplicate (BH22722-DUP1)		Source: 1	209666-01		Prepared:	08/27/12 Ar	nalyzed: 09/	01/12		
Carbonaceous BOD	120	2	2	mg/L		120			0	25
Batch BH22726 - Digestion for	TP by EPA 36	5.2/SM4500	PE							
Blank (BH22726-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08/	31/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22726-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08/	31/12		
Phosphorous - Total as P	0.727	0.040	0.010	mg/L	0.80		91	90-110		
Matrix Spike (BH22726-MS1)		Source: 1	209600-07		Prepared:	08/27/12 Ar	nalyzed: 08/	31/12		
Phosphorous - Total as P	1.07	0.040	0.010	mg/L	1.0	0.106	96	75-125		
Matrix Spike Dup (BH22726-MSD1)	Source: 1	209600-07		Prepared:	08/27/12 Ar	nalyzed: 08/	31/12		
Phosphorous - Total as P	1.08	0.040	0.010	mg/L	1.0	0.106	97	75-125	0.9	25
Batch BH22745 - Sulfide prep										
Blank (BH22745-BLK1)					Prepared 8	Analyzed:	08/27/12			
Sulfide	0.10 U	0.40	0.10	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209674

A 1.	D "	DOL	MDI		Spike	Source	0/ DE0	%REC	DDD	RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22745 - Sulfide prep										
LCS (BH22745-BS1)					Prepared 8	k Analyzed:	08/27/12			
Sulfide	5.23	0.40	0.10	mg/L	5.0		105	85-115		
Matrix Spike (BH22745-MS1)		Source: 1	209674-02		Prepared 8	& Analyzed:	08/27/12			
Sulfide	5.43	0.40	0.10	mg/L	5.0	0.910	90	85-115		
Matrix Spike Dup (BH22745-MSD1)	Source: 1	209674-02		Prepared 8	k Analyzed:	08/27/12			
Sulfide	5.43	0.40	0.10	mg/L	5.0	0.910	90	85-115	0	14
Batch BH22831 - Digestion for	TKN by EPA	351.2								
Blank (BH22831-BLK1)					Prepared:	08/28/12 Ar	nalyzed: 09	/04/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22831-BS1)					Prepared:	08/28/12 Ar	nalyzed: 09	/05/12		
Total Kjeldahl Nitrogen	2.50	0.20	0.05	mg/L	2.5		99	90-110		
Matrix Spike (BH22831-MS1)		Source: 1	209672-02		Prepared:	08/28/12 Ar	nalyzed: 09	/04/12		
Total Kjeldahl Nitrogen	3.40	0.20	0.05	mg/L	2.5	1.09	91	80-120		
Matrix Spike Dup (BH22831-MSD1)	Source: 1	209672-02		Prepared:	08/28/12 Ar	nalyzed: 09	/04/12		
Total Kjeldahl Nitrogen	3.38	0.20	0.05	mg/L	2.5	1.09	90	80-120	0.6	20
Batch BH22934 - alkalinity										
Blank (BH22934-BLK1)					Prepared 8	& Analyzed:	08/29/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209674

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte	Result	FQL	IVIDE	Ullits	Levei	Result	70KEC	LIIIIIIS	KFD	LIIIII
Batch BH22934 - alkalinity										
Blank (BH22934-BLK2)					Prepared 8	& Analyzed:	08/29/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22934-BS1)					Prepared 8	& Analyzed:	08/29/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
LCS (BH22934-BS2)					Prepared 8	& Analyzed:	08/29/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22934-MS1)		Source: 1	209581-04		Prepared 8	& Analyzed:	08/29/12			
Total Alkalinity	130	8.0	2.0	mg/L	120	16	91	80-120		
Matrix Spike (BH22934-MS2)		Source: 1	209674-01		Prepared 8	& Analyzed:	08/29/12			
Total Alkalinity	360	8.0	2.0	mg/L	120	240	95	80-120		
Matrix Spike Dup (BH22934-MSD1)		Source: 1	209581-04		Prepared 8	& Analyzed:	08/29/12			
Total Alkalinity	140	8.0	2.0	mg/L	120	16	100	80-120	8	26
Matrix Spike Dup (BH22934-MSD2)		Source: 1	209674-01		Prepared 8	& Analyzed:	08/29/12			
Total Alkalinity	370	8.0	2.0	mg/L	120	240	103	80-120	3	26
Batch BH23032 - Ammonia by S	BEAL									
Blank (BH23032-BLK1)					Prepared 8	& Analyzed:	08/30/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH23032-BS1)					Prepared 8	& Analyzed:	08/30/12			
Ammonia as N	0.52	0.040	0.009	mg/L	0.50		104	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209674

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH23032 - Ammonia k	y SEAL									
Matrix Spike (BH23032-MS1)		Source: 1	209667-07		Prepared 8	& Analyzed:	08/30/12			
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	0.020	98	90-110		
Matrix Spike Dup (BH23032-MS	D1)	Source: 1	209667-07		Prepared 8	k Analyzed:	08/30/12			
Ammonia as N	0.48	0.040	0.009	mg/L	0.50	0.020	93	90-110	5	10
Batch BH23046 - TSS prep										
Blank (BH23046-BLK1)					Prepared 8	Analyzed:	08/30/12			
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BH23046-BS1)					Prepared 8	k Analyzed:	08/30/12			
Total Suspended Solids	51.5	1	1	mg/L	50		103	85-115		
Duplicate (BH23046-DUP1)		Source: 1	209672-01		Prepared 8	k Analyzed:	08/30/12			
Total Suspended Solids	150	1	1	mg/L		165			10	30
Duplicate (BH23046-DUP2)		Source: 1	209714-01		Prepared 8	k Analyzed:	08/30/12			
Total Suspended Solids	117	1	1	mg/L		122			5	30
Batch BH23049 - Nitrate 353	.2 by seal									
Blank (BH23049-BLK1)					Prepared 8	& Analyzed:	08/31/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH23049-BS1)					Prepared 8	k Analyzed:	08/31/12			
Nitrate+Nitrite (N)	0.843	0.04	0.01	mg/L	0.80		105	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209674

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH23049 - Nitrate 353.2	by seal									
Matrix Spike (BH23049-MS1)		Source: 1	209600-07		Prepared 8	& Analyzed:	08/31/12			
Nitrate+Nitrite (N)	1.14	0.04	0.01	mg/L	1.0	0.131	101	77-119		
Matrix Spike Dup (BH23049-MSD1)		Source: 1	209600-07		Prepared 8	k Analyzed:	08/31/12			
Nitrate+Nitrite (N)	1.19	0.04	0.01	mg/L	1.0	0.131	106	77-119	4	20
Batch Bl20416 - COD prep										
Blank (Bl20416-BLK1)					Prepared 8	& Analyzed:	09/04/12			
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BI20416-BS1)					Prepared 8	k Analyzed:	09/04/12			
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BI20416-MS1)		Source: 1	209647-02		Prepared 8	k Analyzed:	09/04/12			
Chemical Oxygen Demand	54	25	10	mg/L	50	ND	108	85-115		
Matrix Spike Dup (BI20416-MSD1)		Source: 1	209647-02		Prepared 8	k Analyzed:	09/04/12			
Chemical Oxygen Demand	54	25	10	mg/L	50	ND	108	85-115	0	32
Batch Bl20424 - Ion Chromatog	graphy 300.0 l	Prep								
Blank (Bl20424-BLK1)					Prepared 8	& Analyzed:	09/05/12			
Sulfate	0.20 U	0.60	0.20	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BI20424-BS1)					Prepared 8	& Analyzed:	09/05/12			
Sulfate	9.30	0.60	0.20	mg/L	9.0		103	85-115		
Chloride	3.07	0.20	0.050	mg/L	3.0		102	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209674

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch Bl20424 - Ion Chromat	ography 300.0 F	Prep								
LCS Dup (BI20424-BSD1)					Prepared 8	& Analyzed:	09/05/12			
Sulfate	9.35	0.60	0.20	mg/L	9.0		104	85-115	0.5	200
Chloride	3.08	0.20	0.050	mg/L	3.0		103	85-115	0.3	200
Matrix Spike (BI20424-MS1)		Source: 1	209698-03		Prepared 8	& Analyzed:	09/05/12			
Sulfate	165	0.60	0.20	mg/L	90	77.1	98	85-115		
Chloride	329 +O	0.20	0.050	mg/L	30	316	43	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209674

Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22724 - FC-MF										
Blank (BH22724-BLK1)		Prepared: 08/27/12 Analyzed: 08/28/12								
Fecal Coliforms	1 U	1	1	CFU/100 n	nl					
Duplicate (BH22724-DUP1)		Source: 1209675-02		Prepared: 08/27/12 Analyzed: 08/28/12						
Fecal Coliforms	1 U	1	1	CFU/100 n	nl	ND				200

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 10, 2012 Work Order: 1209674

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

+O Matrix spike source sample was over the reccommended range for the method.

Finder

SAL Project No. 1209674

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Client Name Hazer and Saware	Salar A	737						Contact / Phone:		13-6	813-620-4468	2	3
Project Name / Location CYCLES SHOW	ES SHES	Pa	SE# 2					Turn Arour	Turn Around Time Requested (quested (*Surch	*Surcharges may apply) Days*	s may apply 10 Bus. Days	
Samplers: (Signature)	1 P		ı			/ <u>4</u>	PARAMETER / CONTAINER DESCRIPTION	CONTAINE	R DESCRI				
Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water	Vastewater ge SO-Soil Vater O-Other					1001-428A	OW) The	つ。	17/Cm		Zr Acel=E/Acal	יכון	letoT) zner (noif
SAL Use Only Sample Description	iption	Date	əmiT	XintsM	Grab Grab 75 75	DECEMBLE AS CLOSE ALL 255	H& HOLLIN	Tanp	Specific Conduct		5 ^z H	JW 152WC B'C	No. of Contain per each loca
OF THS-LINER-SP	ds	3 27 12	B:45am	5W	7		h'9	37.C	910	2.7		2	S
of TRG- LINER-SP	Sp	سالهزاه	8.30cm	2	>		6.4	22.0	719	3.0	_	7	7
		-				i							
			-										
						1							
												`	
Containers Prepared/ Relinquished:	Date/Time:	Received: Gasele Lete			Date/Time: It can	1	Seal intact? Samples intact upon arrival?		z z Z	nstructions	Instructions / Remarks		
Relinquished: Grapho U	Date/Time: 105 Z	Received: BIULK	3.4KE	0	Date/Time: 8-27 /052		Received on ice? Temp		∀ Z Z				
Relinquished: $(\omega)_{\mathcal{L}} / \mathcal{L}$		Received:		<u> </u>	اء ا	Proper Pec'd	Proper preservatives indicated? Rec'd within holding time?		d d Z z z z				
	Date/Time:	Received		Δ	Date/Time:	Volatile	Volatiles rec'd w/out headspace		z >				·
Relinquished:	Date/Time:	Received:		۵	Date/Time:	<u> </u>			v z				
Chain of Custody vis													

Chain of Custody.xls Rev.Date 11/19/01

Chain of Custody

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1209007 Revised Report

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA6-LY-C						
Matrix		Groundwater						
SAL Sample Number		1209007-01						
Date/Time Collected		08/20/12 13:10						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
<u>Inorganics</u>								
Hydrogen Sulfide (Unionized)	mg/L	18	SM 4550SF	0.04	0.01		08/21/12 15:33	MEJ
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 14:28	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	09/24/12 16:42	09/24/12 16:44	MMF
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	08/22/12 12:36	08/27/12 13:22	MEJ
Chemical Oxygen Demand	mg/L	85	EPA 410.4	25	10	08/21/12 12:10	08/21/12 13:20	CDB
Chloride	mg/L	53	EPA 300.0	0.20	0.050		08/23/12 01:16	JAG
Nitrate+Nitrite (N)	mg/L	2.7	EPA 353.2	0.40	0.10		08/22/12 13:08	MMF
Phosphorous - Total as P	mg/L	1.9	SM 4500P-E	0.040	0.010	08/21/12 11:40	08/22/12 12:51	MMF
Sulfate	mg/L	40	EPA 300.0	0.60	0.20		08/23/12 01:16	JAG
Sulfide	mg/L	21	SM 4500SF	0.40	0.10		08/20/12 16:10	MEJ
Total Alkalinity	mg/L	110	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 13:30	MMF
<u>Microbiology</u>								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	08/20/12 16:19	08/21/12 14:25	HKG
Sample Description		TA6-Denite Tank						
Matrix		Wastewater						
SAL Sample Number		1209007-03						
Date/Time Collected		08/24/12 10:00						
Collected by		Sean Schmidt						
Date/Time Received		08/24/12 13:30						
<u>Inorganics</u>								
Hydrogen Sulfide (Unionized)	mg/L	1.0	SM 4550SF	0.04	0.01		08/27/12 16:31	MEJ
Ammonia as N	mg/L	0.14	EPA 350.1	0.040	0.009		08/26/12 11:10	MMF
Ammonium as NH4	mg/L	0.18	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	08/24/12 14:40	08/29/12 13:53	MEJ
Chemical Oxygen Demand	mg/L	120	EPA 410.4	25	10	08/27/12 14:50	08/27/12 16:55	CDB
Chloride	mg/L	58	EPA 300.0	0.20	0.050		09/06/12 01:26	JAG
Nitrate+Nitrite (N)	mg/L	0.05	EPA 353.2	0.04	0.01		08/27/12 11:52	MMF
Phosphorous - Total as P	mg/L	5.9	SM 4500P-E	0.40	0.10	08/27/12 13:35	08/28/12 13:17	MMF
Sulfate	mg/L	120	EPA 300.0	0.60	0.20		09/06/12 01:26	JAG
Sulfide	mg/L	1.7	SM 4500SF	0.40	0.10		08/27/12 16:31	MEJ
Total Alkalinity	mg/L	170	SM 2320B	8.0	2.0	08/25/12 10:00	08/27/12 09:11	AES
Total Kjeldahl Nitrogen	mg/L	4.0	EPA 351.2	0.20	0.05	08/27/12 08:31	08/28/12 11:43	MMF
Total Suspended Solids	mg/L	2	SM 2540D	1	1	08/27/12 09:55	08/28/12 09:13	CMS
Microbiology								
Fecal Coliforms	CFU/100 ml	180	SM 9222D	1	1	08/24/12 15:16	08/25/12 14:15	HKG

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1209007

Revised Report

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22114 - Digestion for	ΓP by EPA 36	5.2/SM4500	PE							
Blank (BH22114-BLK1)					Prepared:	08/21/12 Ar	nalyzed: 08/	22/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22114-BS1)					Prepared:	08/21/12 Ar	nalyzed: 08/	22/12		
Phosphorous - Total as P	0.822	0.040	0.010	mg/L	0.80		103	90-110		
Matrix Spike (BH22114-MS1)		Source: 1	209304-02		Prepared:	08/21/12 Ar	nalyzed: 08/	22/12		
Phosphorous - Total as P	1.08	0.040	0.010	mg/L	1.0	0.0385	104	75-125		
Matrix Spike Dup (BH22114-MSD1)		Source: 1	209304-02		Prepared:	08/21/12 Ar	nalyzed: 08/	22/12		
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0385	98	75-125	6	25
Batch BH22118 - COD prep										
Blank (BH22118-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH22118-BS1)					Prepared 8	& Analyzed:	08/21/12			
Chemical Oxygen Demand	47	25	10	mg/L	50		94	90-110		
Matrix Spike (BH22118-MS1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/21/12			
Chemical Oxygen Demand	47	25	10	mg/L	50	ND	94	85-115		
Matrix Spike Dup (BH22118-MSD1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/21/12			
Chemical Oxygen Demand	49	25	10	mg/L	50	ND	98	85-115	4	32
Batch BH22122 - Ammonia by S	EAL									
Blank (BH22122-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Diamik (Dilez izz Dziki)										

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1209007

Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22122 - Ammonia by	SEAL									
LCS (BH22122-BS1)					Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.54	0.040	0.009	mg/L	0.50		108	90-110		
Matrix Spike (BH22122-MS1)		Source: 1	209008-01		Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.52	0.040	0.009	mg/L	0.50	ND	104	90-110		
Matrix Spike Dup (BH22122-MSD1))	Source: 1	209008-01		Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	103	90-110	2	10
Batch BH22131 - Sulfide prep										
Blank (BH22131-BLK1)					Prepared 8	& Analyzed:	08/20/12			
Sulfide	0.10 U	0.40	0.10	mg/L						
LCS (BH22131-BS1)					Prepared 8	& Analyzed:	08/20/12			
Sulfide	5.03	0.40	0.10	mg/L	5.0		101	85-115		
Matrix Spike (BH22131-MS1)		Source: 1	209143-02		Prepared 8	& Analyzed:	08/20/12			
Sulfide	5.23	0.40	0.10	mg/L	5.0	ND	105	85-115		
Matrix Spike Dup (BH22131-MSD1))	Source: 1	209143-02		Prepared 8	& Analyzed:	08/20/12			
Sulfide	5.23	0.40	0.10	mg/L	5.0	ND	105	85-115	0	14
Batch BH22136 - alkalinity										
Blank (BH22136-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1209007

Revised Report

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
	rtoouit			Onno	20101	rtocan	701120	Lillino	141 2	Littie
Batch BH22136 - alkalinity										
Blank (BH22136-BLK2)					Prepared 8	k Analyzed: (08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22136-BS1)					Prepared 8	k Analyzed: (08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
LCS (BH22136-BS2)					Prepared 8	k Analyzed: (08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22136-MS1)		Source: 1	209336-06		Prepared 8	k Analyzed: (08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120		
Matrix Spike (BH22136-MS2)		Source: 1	209336-07		Prepared 8	k Analyzed: (08/21/12			
Total Alkalinity	250	8.0	2.0	mg/L	120	140	86	80-120		
Matrix Spike Dup (BH22136-MSD1)		Source: 1	209336-06		Prepared 8	k Analyzed: (08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	0	26
Matrix Spike Dup (BH22136-MSD2)		Source: 1	209336-07		Prepared 8	k Analyzed: (08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	4	26
Batch BH22142 - Digestion for 1	KN by EPA	351.2								
Blank (BH22142-BLK1)					Prepared: (08/21/12 An	nalyzed: 08	23/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22142-BS1)					Prepared: (08/21/12 An	nalyzed: 08	23/12		
Total Kjeldahl Nitrogen	2.42	0.20	0.05	mg/L	2.5		96	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1209007

Revised Report

Analyto	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte	Result	FQL	IVIDL	UTIILS	Level	Result	70KEC	LIIIIIIS	KFD	LIIIII
Batch BH22142 - Digestion f	or TKN by EPA	351.2								
Matrix Spike (BH22142-MS1)		Source: 1	209008-01		Prepared:	08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	2.35	0.20	0.05	mg/L	2.5	ND	93	80-120		
Matrix Spike Dup (BH22142-MSI	01)	Source: 1	209008-01		Prepared:	08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	2.37	0.20	0.05	mg/L	2.5	ND	93	80-120	0.7	20
Batch BH22207 - Nitrate 353	2 by seal									
Blank (BH22207-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22207-BS1)					Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.802	0.04	0.01	mg/L	0.80		100	90-110		
Matrix Spike (BH22207-MS1)		Source: 1	209008-01		Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0281	106	77-119		
Matrix Spike Dup (BH22207-MSI	D1)	Source: 1	209008-01		Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0281	106	77-119	0.2	20
Batch BH22212 - Ion Chroma	atography 300.0	Prep								
Blank (BH22212-BLK1)					Prepared 8	& Analyzed:	08/23/12			
Sulfate	0.20 U	0.60	0.20	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH22212-BS1)					Prepared 8	& Analyzed:	08/23/12			
Chloride	2.89	0.20	0.050	mg/L	3.0		96	85-115		
Sulfate	8.89	0.60	0.20	mg/L	9.0		99	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1209007

Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22212 - Ion Chromat	ography 300.0	Prep								
LCS Dup (BH22212-BSD1)					Prepared 8	& Analyzed:	08/23/12			
Chloride	2.88	0.20	0.050	mg/L	3.0		96	85-115	0.3	200
Sulfate	8.82	0.60	0.20	mg/L	9.0		98	85-115	8.0	200
Matrix Spike (BH22212-MS1)		Source: 1	209013-04		Prepared 8	k Analyzed:	08/23/12			
Chloride	16.5	0.20	0.050	mg/L	3.0	13.5	100	80-120		
Sulfate	64.5	0.60	0.20	mg/L	9.0	55.2	103	85-115		
Matrix Spike (BH22212-MS2)		Source: 1	209013-17		Prepared 8	k Analyzed:	08/23/12			
Chloride	17.8	0.20	0.050	mg/L	3.0	15.1	90	80-120		
Sulfate	66.8	0.60	0.20	mg/L	9.0	58.7	90	85-115		
Batch BH22233 - BOD										
Blank (BH22233-BLK1)					Prepared: (08/22/12 Ar	nalyzed: 08	/27/12		
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BH22233-BS1)					Prepared: (08/22/12 Ar	nalyzed: 08	/27/12		
Carbonaceous BOD	172	2	2	mg/L	200		86	85-115		
LCS Dup (BH22233-BSD1)					Prepared: (08/22/12 Ar	nalyzed: 08	/27/12		
Carbonaceous BOD	196	2	2	mg/L	200		98	85-115	13	200
Duplicate (BH22233-DUP1)		Source: 1	209356-01		Prepared: (08/22/12 Ar	nalyzed: 08	/27/12		
Carbonaceous BOD	280	2	2	mg/L		270			5	25
Batch BH22444 - BOD										
Blank (BH22444-BLK1)					Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		·
Carbonaceous BOD	2 U	2	2	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1209007

Revised Report

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22444 - BOD	. 1000.11	. 42				. 1000.1	70.120			
Blank (BH22444-BLK2)					Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BH22444-BS1)					Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	190	2	2	mg/L	200		95	85-115		
LCS (BH22444-BS2)					Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	181	2	2	mg/L	200		90	85-115		
LCS Dup (BH22444-BSD1)					Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	184	2	2	mg/L	200		92	85-115	3	200
LCS Dup (BH22444-BSD2)					Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	180	2	2	mg/L	200		90	85-115	0.8	200
Duplicate (BH22444-DUP1)		Source: 1	209566-01		Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	140	2	2	mg/L		150			7	25
Duplicate (BH22444-DUP2)		Source: 1	209571-01		Prepared: (08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	150	2	2	mg/L		180			19	25
Batch BH22504 - alkalinity										
Blank (BH22504-BLK1)					Prepared: (08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22504-BS1)					Prepared: (08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1209007

Revised Report

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte	Result	FQL	IVIDE	Offics	Levei	Result	/0KLC	LIIIIII	KFD	LIIIII
Batch BH22504 - alkalinity										
Matrix Spike (BH22504-MS1)		Source: 1	209007-03		Prepared:	08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	290	8.0	2.0	mg/L	120	170	95	80-120		
Matrix Spike Dup (BH22504-MSD1	l)	Source: 1	209007-03		Prepared:	08/25/12 Ar	nalyzed: 08	/27/12		
Total Alkalinity	290	8.0	2.0	mg/L	120	170	95	80-120	0	26
Batch BH22601 - Ammonia by	SEAL									
Blank (BH22601-BLK1)					Prepared 8	& Analyzed:	08/26/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22601-BS1)					Prepared 8	& Analyzed:	08/26/12			
Ammonia as N	0.49	0.040	0.009	mg/L	0.50		97	90-110		
Matrix Spike (BH22601-MS1)		Source: 1	209380-04		Prepared 8	& Analyzed:	08/26/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.032	94	90-110		
Matrix Spike Dup (BH22601-MSD1	l)	Source: 1	209380-04		Prepared 8	& Analyzed:	08/26/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.032	93	90-110	2	10
Batch BH22701 - Digestion for	r TKN by EPA	351.2								
Blank (BH22701-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22701-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	2.65	0.20	0.05	mg/L	2.5		105	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1209007

Revised Report

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22701 - Digestion for	TKN by EPA	351.2								
Matrix Spike (BH22701-MS1)		Source: 1	208987-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	7.94	0.20	0.05	mg/L	2.5	5.56	94	80-120		
Matrix Spike Dup (BH22701-MSD1)	Source: 1	208987-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Kjeldahl Nitrogen	8.31	0.20	0.05	mg/L	2.5	5.56	108	80-120	4	20
Batch BH22704 - Nitrate 353.2	by seal									
Blank (BH22704-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22704-BS1)					Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	0.786	0.04	0.01	mg/L	0.80		98	90-110		
Matrix Spike (BH22704-MS1)		Source: 1	209016-21		Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	12.4	0.40	0.10	mg/L	10	2.55	99	77-119		
Matrix Spike Dup (BH22704-MSD1)	Source: 1	209016-21		Prepared 8	& Analyzed:	08/27/12			
Nitrate+Nitrite (N)	12.7	0.40	0.10	mg/L	10	2.55	102	77-119	2	20
Batch BH22709 - TSS prep										
Blank (BH22709-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BH22709-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Suspended Solids	54.8	1	1	mg/L	50		110	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1209007

Revised Report

A 1.	D "	DOI	MDI		Spike	Source	0/ DE0	%REC	DDD	RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22709 - TSS prep										
Duplicate (BH22709-DUP1)		Source: 1	209495-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Suspended Solids	162	1	1	mg/L		173			7	30
Duplicate (BH22709-DUP2)		Source: 1	209520-01		Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Total Suspended Solids	84.0	1	1	mg/L		88.0			5	30
Batch BH22711 - COD prep										
Blank (BH22711-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH22711-BS1)					Prepared 8	k Analyzed:	08/27/12			
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BH22711-MS1)		Source: 1	209016-05		Prepared 8	& Analyzed:	08/27/12			
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115		
Matrix Spike Dup (BH22711-MSD1)	Source: 1	209016-05		Prepared 8	k Analyzed:	08/27/12			
Chemical Oxygen Demand	56	25	10	mg/L	50	ND	112	85-115	0	32
Batch BH22721 - Digestion for	r TP by EPA 36	5.2/SM450	0PE							
Blank (BH22721-BLK1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22721-BS1)					Prepared:	08/27/12 Ar	nalyzed: 08	/28/12		
Phosphorous - Total as P	0.790	0.040	0.010	mg/L	0.80		99	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1209007

Revised Report

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22721 - Digestion for)PF			. 1000.1	70.120			
Matrix Spike (BH22721-MS1)	II by EI A oc		209020-09		Prepared:	08/27/12 Ar	nalyzed: 08/	/28/12		
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0702	95	75-125		
Matrix Spike Dup (BH22721-MSD1)	Source: 1	209020-09		Prepared:	08/27/12 Ar	nalyzed: 08/	/28/12		
Phosphorous - Total as P	1.02	0.040	0.010	mg/L	1.0	0.0702	95	75-125	0.3	25
Batch BH22745 - Sulfide prep										
Blank (BH22745-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Sulfide	0.10 U	0.40	0.10	mg/L						
LCS (BH22745-BS1)					Prepared 8	& Analyzed:	08/27/12			
Sulfide	5.23	0.40	0.10	mg/L	5.0		105	85-115		
Matrix Spike (BH22745-MS1)		Source: 1	209674-02		Prepared 8	& Analyzed:	08/27/12			
Sulfide	5.43	0.40	0.10	mg/L	5.0	0.910	90	85-115		
Matrix Spike Dup (BH22745-MSD1)	Source: 1	209674-02		Prepared 8	& Analyzed:	08/27/12			
Sulfide	5.43	0.40	0.10	mg/L	5.0	0.910	90	85-115	0	14
Batch BI20517 - Ion Chromato	graphy 300.0	Prep								
Blank (Bl20517-BLK1)					Prepared 8	& Analyzed:	09/06/12			
Chloride	0.050 U	0.20	0.050	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
LCS (BI20517-BS1)					Prepared 8	& Analyzed: (09/06/12			
Chloride	2.94	0.20	0.050	mg/L	3.0		98	85-115		
Sulfate	9.00	0.60	0.20	mg/L	9.0		100	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1209007

Revised Report

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch Bl20517 - Ion Chromat	tography 300.0 I	Prep								
LCS Dup (BI20517-BSD1)					Prepared 8	& Analyzed:	09/06/12			
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115	0.3	200
Sulfate	8.94	0.60	0.20	mg/L	9.0		99	85-115	0.7	200
Matrix Spike (BI20517-MS1)		Source: 1	1209988-01		Prepared 8	& Analyzed:	09/06/12			
Sulfate	18.1	0.60	0.20	mg/L	9.0	8.76	104	85-115		
Chloride	10.3	0.20	0.050	mg/L	3.0	7.03	109	80-120		
Matrix Spike (BI20517-MS2)		Source: 1	1209712-01		Prepared 8	& Analyzed:	09/06/12			
Sulfate	120 J5	0.60	0.20	mg/L	9.0	115	56	85-115		
Chloride	16.8	0.20	0.050	mg/L	3.0	14.0	93	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1209007

Revised Report

Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22046 - FC-MF										
Blank (BH22046-BLK1)					Prepared:	08/20/12 Ar	nalyzed: 08/	21/12		
Fecal Coliforms	1 U	1	1	CFU/100 n	nl					
Duplicate (BH22046-DUP1)		Source: 1	209006-	01	Prepared:	08/20/12 Ar	nalyzed: 08/	21/12		
Fecal Coliforms	1 U	1	1	CFU/100 n	nl	ND				200
Batch BH22446 - FC-MF										
Blank (BH22446-BLK1)					Prepared:	08/24/12 Ar	nalyzed: 08/	25/12		
Fecal Coliforms	1 U	1	1	CFU/100 n	nl					
Duplicate (BH22446-DUP1)		Source: 1	209006-	03	Prepared:	08/24/12 Ar	nalyzed: 08/	25/12		
Fecal Coliforms	290	1	1	CFU/100 n	nl	200			37	200

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 28, 2012 Work Order: 1209007 Revised Report

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

J5 Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.

Finder

SAL Project No. 1209007

SOUTHERN ANALYTICAL LABORATORIES, INC. 1100BAYVIEWBOULEVARD, OLD SMAR, FL 34877 813-855-1844 fax 813-855-2218

Client Name	-	9							!	8	Contact / Phone:	ione:							
100000000000000000000000000000000000000	Hazen	Hazen and Sawyer																	
Project Name / Location	MORS	S&GW Test Facility SE#2	V 0F#2																
Samplers: (Signature)	X	1	13		!				PARA	PARAMETER / CONTAINER DESCRIPTION	NIATNO	ER DESC	RIPTION						
Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water	Vastewater ge SO-Soil later O-Other)				5О¢ Чт, СОD, ТР													
Sample Description	otion	- Date	-Time	xintsM	Somposite Grab	260mL P, H ₂ 5	1LP, Cool TSS TSS TLP, Cool	12, NaOH, Z H ₂ S 126ml P N2	EC-WE 152WF b' Nsi						DO	Нq	Conductivity	Temperature	No. of Conta
01 TA6-LY-C		a-0e-80	150	GW	×		-	1	2									+	
$\overline{}$		9/24/17	3 Cm 8	MM	×	-	1	1	2										
		8/au/12		ww	×	-	1		2						4.9	6.8	853 2	780	<i>b</i>
$\overline{}$		•															+	1	
				i										-					
																		_	
																		\dashv	
														_				+	T
														_				\dashv	
Containers Prepared/	Date/Time: P(S	Received:	1	10/5	Date/Time: 19	1610	<u>ل</u> ما!		Seal intact?			ŕ	© z ≻						
Relinquished:	Date/Time: 4.3 %	Repetyed	; 	7	Date/Tin	Date/Time: 13	1330	T	Samples int	Samples intact upon arrival?	rival?		¥ _N N			/			
17/	CXTX	玉	1	1	°	he-so	7	ì	Received on ice? Temp	nice? Temp)(z Z			5			
Relinquished:	Date/Time:	Received:			Date/Time	 			Proper pres	Proper preservatives indicated?	dicated?	V	§ z) ()						
Relinquished:	Date/Time:	Received:		:	Date/Time:	<u> </u>			Rec'd withir Volatiles re	Rec'd within holding time? Volatites rec'd w/out headspace?	e? sadspace?	U	¥ (₹) z z }						
Relinquished:	Date/Time:	Received:	;		Date/Time	.e:			Proper containers used?	ainers used	<u>C-</u>)	Q N N					7	1209007
Channof Custody,x/s Rev Date 11/19/01			ļ										Chain of Custody	Custody					

J

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209017

Laboratory Report

Project Name		S&GW Test	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA5-PZ-I						
Matrix		Groundwater						
SAL Sample Number		1209017-01						
Date/Time Collected		08/23/12 08:43						
Collected by		Sean Schmidt						
Date/Time Received		08/23/12 13:00						
Field Parameters								
pH	SU	4.7	DEP FT1100	0.1	0.1		08/23/12 08:43	SAS
Water Temperature	°C	26.7	DEP FT1400	0.1	0.1		08/23/12 08:43	SAS
Specific conductance	umhos/cm	312	DEP FT1200	0.1	0.1		08/23/12 08:43	SAS
Dissolved Oxygen	mg/L	1.1	DEP FT1500	0.1	0.1		08/23/12 08:43	SAS
<u>Inorganics</u>								
Hydrogen Sulfide (Unionized)	mg/L	0.01 U	SM 4550SF	0.04	0.01		08/27/12 16:31	MEJ
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:19	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	08/24/12 14:40	08/29/12 13:53	MEJ
Chemical Oxygen Demand	mg/L	11 I	EPA 410.4	25	10	08/24/12 14:40	08/24/12 16:45	CDB
Nitrate+Nitrite (N)	mg/L	5.3	EPA 353.2	0.40	0.10		08/29/12 13:12	MMF
Phosphorous - Total as P	mg/L	0.033 I	SM 4500P-E	0.040	0.010	08/24/12 11:50	08/27/12 12:22	MMF
Sulfide	mg/L	0.10 U	SM 4500SF	0.40	0.10		08/27/12 16:31	MEJ
Total Alkalinity	mg/L	2.1 l	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	08/28/12 08:37	08/29/12 11:35	MMF
Total Suspended Solids	mg/L	1	SM 2540D	1	1	08/28/12 14:02	08/30/12 14:39	CMS
<u>Microbiology</u>								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	08/23/12 14:02	08/24/12 12:37	HKG

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209017

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22414 - COD prep										
Blank (BH22414-BLK1)					Prepared 8	& Analyzed:	08/24/12			
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH22414-BS1)					Prepared 8	& Analyzed:	08/24/12			
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BH22414-MS1)		Source: 1	209017-01		Prepared 8	k Analyzed:	08/24/12			
Chemical Oxygen Demand	54	25	10	mg/L	50	11	86	85-115		
Matrix Spike Dup (BH22414-MSD	1)	Source: 1	209017-01		Prepared 8	k Analyzed:	08/24/12			
Chemical Oxygen Demand	54	25	10	mg/L	50	11	86	85-115	0	32
Batch BH22415 - Digestion fo	or TP by EPA 36	5.2/SM4500)PE							
Blank (BH22415-BLK1)					Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22415-BS1)					Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.754	0.040	0.010	mg/L	0.80		94	90-110		
Matrix Spike (BH22415-MS1)		Source: 1	209476-08		Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.933	0.040	0.010	mg/L	1.0	ND	93	75-125		
Matrix Spike Dup (BH22415-MSD	1)	Source: 1	209476-08		Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.901	0.040	0.010	mg/L	1.0	ND	90	75-125	3	25
Batch BH22444 - BOD										
Blank (BH22444-BLK1)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	2 U	2	2	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209017

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte	resuit	I QL	WIDE	Office	Level	Result	/orkEC	LIIIIII	INI D	LIIIII
Batch BH22444 - BOD										
Blank (BH22444-BLK2)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BH22444-BS1)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	190	2	2	mg/L	200		95	85-115		
LCS (BH22444-BS2)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	181	2	2	mg/L	200		90	85-115		
LCS Dup (BH22444-BSD1)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	184	2	2	mg/L	200		92	85-115	3	200
LCS Dup (BH22444-BSD2)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	180	2	2	mg/L	200		90	85-115	0.8	200
Duplicate (BH22444-DUP1)		Source: 1	209566-01		Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	140	2	2	mg/L		150			7	25
Duplicate (BH22444-DUP2)		Source: 1	209571-01		Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	150	2	2	mg/L		180			19	25
Batch BH22745 - Sulfide prep										
Blank (BH22745-BLK1)					Prepared 8	k Analyzed:	08/27/12			
Sulfide	0.10 U	0.40	0.10	mg/L						
LCS (BH22745-BS1)					Prepared 8	k Analyzed:	08/27/12			
Sulfide	5.23	0.40	0.10	mg/L	5.0		105	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209017

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22745 - Sulfide prep										
Matrix Spike (BH22745-MS1)		Source: 1	209674-02		Prepared 8	& Analyzed:	08/27/12			
Sulfide	5.43	0.40	0.10	mg/L	5.0	0.910	90	85-115		
Matrix Spike Dup (BH22745-MSD1)		Source: 1	209674-02		Prepared 8	k Analyzed:	08/27/12			
Sulfide	5.43	0.40	0.10	mg/L	5.0	0.910	90	85-115	0	14
Batch BH22801 - Digestion for 1	TKN by EPA	351.2								
Blank (BH22801-BLK1)					Prepared: (08/28/12 Ar	nalyzed: 08	/29/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22801-BS1)					Prepared: (08/28/12 Ar	nalyzed: 08	/29/12		
Total Kjeldahl Nitrogen	2.38	0.20	0.05	mg/L	2.5		94	90-110		
Matrix Spike (BH22801-MS1)		Source: 1	209487-07		Prepared: (08/28/12 Ar	nalyzed: 08	/29/12		
Total Kjeldahl Nitrogen	3.17	0.20	0.05	mg/L	2.5	0.455	107	80-120		
Matrix Spike Dup (BH22801-MSD1)		Source: 1	209487-07		Prepared: (08/28/12 Ar	nalyzed: 08	/29/12		
Total Kjeldahl Nitrogen	3.09	0.20	0.05	mg/L	2.5	0.455	104	80-120	3	20
Batch BH22825 - alkalinity										
Blank (BH22825-BLK1)					Prepared 8	k Analyzed:	08/28/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22825-BS1)					Prepared 8	k Analyzed:	08/28/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209017

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22825 - alkalinity										
Matrix Spike (BH22825-MS1)		Source: 1	209020-06		Prepared 8	Analyzed:	08/28/12			
Total Alkalinity	130	8.0	2.0	mg/L	120	4.2	100	80-120		
Matrix Spike Dup (BH22825-MSD1)	Source: 1	209020-06		Prepared 8	Analyzed:	08/28/12			
Total Alkalinity	130	8.0	2.0	mg/L	120	4.2	100	80-120	0	26
Batch BH22830 - TSS prep										
Blank (BH22830-BLK1)					Prepared: (08/28/12 Ar	nalyzed: 08	/30/12		
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BH22830-BS1)					Prepared: (08/28/12 Ar	nalyzed: 08	/30/12		
Total Suspended Solids	54.2	1	1	mg/L	50		108	85-115		
Duplicate (BH22830-DUP1)		Source: 1	209561-01		Prepared: (08/28/12 Ar	nalyzed: 08	/30/12		
Total Suspended Solids	164	1	1	mg/L		166			1	30
Duplicate (BH22830-DUP2)		Source: 1	209564-01		Prepared: (08/28/12 Ar	nalyzed: 08	/30/12		
Total Suspended Solids	94.0	1	1	mg/L		100			6	30
Batch BH22843 - Nitrate 353.2	by seal									
Blank (BH22843-BLK1)					Prepared 8	Analyzed:	08/29/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22843-BS1)					Prepared 8	Analyzed:	08/29/12			
Nitrate+Nitrite (N)	0.832	0.04	0.01	mg/L	0.80		104	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209017

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22843 - Nitrate 353.2	2 by seal									
Matrix Spike (BH22843-MS1)		Source: 1	209476-03		Prepared 8	k Analyzed:	08/29/12			
Nitrate+Nitrite (N)	1.22	0.04	0.01	mg/L	1.0	0.0664	115	77-119		
Matrix Spike Dup (BH22843-MSD	1)	Source: 1	209476-03		Prepared 8	k Analyzed:	08/29/12			
Nitrate+Nitrite (N)	1.22	0.04	0.01	mg/L	1.0	0.0664	116	77-119	0.4	20
Batch BH22931 - Ammonia by	SEAL									
Blank (BH22931-BLK1)					Prepared 8	k Analyzed:	08/30/12			
Blank (BH22931-BLK1) Ammonia as N	0.009 U	0.040	0.009	mg/L	Prepared 8	& Analyzed:	08/30/12			
	0.009 U	0.040	0.009	mg/L	<u> </u>	k Analyzed:				
Ammonia as N	0.009 U 0.48	0.040	0.009	mg/L	<u> </u>			90-110		
Ammonia as N LCS (BH22931-BS1)		0.040			Prepared 8		08/30/12 96	90-110		
Ammonia as N LCS (BH22931-BS1) Ammonia as N		0.040	0.009		Prepared 8	& Analyzed:	08/30/12 96	90-110		
Ammonia as N LCS (BH22931-BS1) Ammonia as N Matrix Spike (BH22931-MS1)	0.48	0.040 Source: 1 0.040	0.009 209015-20	mg/L	Prepared 8 0.50 Prepared 8 0.50	Analyzed:	08/30/12 96 08/30/12 98			

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209017

Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22328 - FC-MF										
Blank (BH22328-BLK1)					Prepared:	08/23/12 Ar	nalyzed: 08/	24/12		
Fecal Coliforms	1 U	1	1	CFU/100 n	nl					
Duplicate (BH22328-DUP1)		Source: 1	208986-	01	Prepared:	08/23/12 Ar	nalyzed: 08/	24/12		
Fecal Coliforms	81,000	1	1	CFU/100 n	nl	92000			13	200

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209017

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

Finder

F1090CI . ID09017

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

Signature Antital Signature An	Contact / Phone:		PARAMETER / CONTAINER DESCRIPTION	Grab 250mL P, H ₂ SO ₄ 1LP, Cool 1LP, MaOH, Zn Acetate 1LP, MaOH, Zn Acetate 125mL P, Na ₂ S ₂ O ₃ PC-MF DO DO DO DO No. of Containers (Total PH PH Temperature	x 1 1 1 2 (.11 47311.726.7			Date-Time: 1873 Seal intact? Y N (A) O\$ (\$'\$' (?*) Samples intact upon arrival? (\$') N NA O\$.23 · Py Received on ice? Temp (\$') N NA	Rec'd within holding time? Volatiles rec'd w/out headspace?	Date/Time: Proper containers used? (Y) N NA
	Hazen and Sawyer	acility SE#2		Matrix Composite				Received: Date/	Received: Date/	Received: Date/

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	F	lazen and Sawye	r	Location:				Contact: Phone:			
Date Sampled	08	82312	,	SAL Project #	1209	017		Project Name	S&GV	V Test Facility	SE #5
Well Number		TA5-PZ-I				01		GPS LAT			
		 		P	URGING			GPS LONG			
WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.07	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	7.63	PURGE PUMP CODE	€P GP
TOTAL WELL DEPTH (Feet)	14.76	REFERENCE ELEVATION (NGVD)		GROUND ELEV/ (REFERENC	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
		bmerged Screen TAL DEPTH - ST				EQ Volume, 3	s, 3 Minutes)	q Partially Sub	merged Scree	en (1 Well, 3,3	minutes)
ONE WELL VOLUME		85	1/4 WELL VOLUME	X WELL CAPI	CITY =	3 WELL VOLUMES	0.8.	5	5 WELL VOLUMES		
VOLONIE	U - 2	EQUIPMENT VO		I 1P VOLUME +	(TUBING CAI						
PUMP VOLUME			TUBING LEGNTH			FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBII IN WELL				NG LEGNTH L (FEET)		PURGE TIME START	0832	PURGE TIME END	0842	TOTAL PURGED	0.90
INST. ID	\times	$>\!\!<$	\times	\times	SAL-SAM-63 <u>0</u>	SAL-SAM - 65- <u>0>/</u>	SAL-SAM-63	-SAL-SAM-55 - <u>ح</u> رے	SAL-SAM- 0_/	\geq	\times
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0835	0.30	0.30	0.10	8.09	4.8	76.6	312.5	0.96	14.2	CLEAN	NONE
0836	0.30	T			4.7	Z6.1	3/1.8	1.11	15.2		
0842	0.30	6.90	<u> </u>		4.7	26:7	311.7	1.11	11.7		1
	VA/GIL C	apacity (gallons/	(not): 0.75"=0	.02. 1,25"=0	0.06, 2"=0.1	 6, 3"=0.37	. 4"=0.65,	5"=1.02. 6	<u> </u> '''=1.47, 12	."5.88	
TUBIN		A. CAPACITY (Gallons/					5/16" = 0.00				0.016
					AMPLIN		1				
SAMPLED BY			SAL			SAMF	PLER(S) ATURES:		A	1	
TUBING MAT (CIRCL	ERIAL CODE E ONE)	PP PE N	P (TL)TT		TUBING WELL (FEET)			SAMPLE PI RATE (I	JMP FLOW mL/min)		
SAMPLING INITIATED FIELD	0543	SAMPLING ENDED FILTER SIZE	044	FIELD CLEANED	YO	CLEANING STEPS VOC COL	LECTED BY	V 11/4720	SEMI-VOLS	COLLECTED) <u> </u>
FILTERED? PRESER	RVATION	(μm) Y N N/A		DUPLICATE SERVATIVES DED	YN	REVERS	SE FLOW?	Y N N/A	THROU	GH TRAP?	YNER
WEA ⁻	THER	Clear	1								
COMM	MENTS										
	71.0	PUMP CO	DES: PP=Pe	ristaltic Pump,	GP= Submers	sible Grundfos	Pump, IBP= I	n-place Bladder	Pump	eflon	
D,	eviewed By		CODES: PP=	rolypropylene	s, re- Polyeti	nyiene, NP=1	Date		Lineu, II-II	511OH	
	eviewed by	<u>.1</u>					, Date	1			

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 **September 6, 2012 Work Order: 1209018**

Laboratory Report

Project Name		S&GW Tes	t Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		TA6-PZ-I						
Matrix		Groundwater						
SAL Sample Number		1209018-01						
Date/Time Collected		08/23/12 09:20						
Collected by		Sean Schmidt						
Date/Time Received		08/23/12 13:00						
Field Parameters								
рН	SU	5.4	DEP FT1100	0.1	0.1		08/23/12 09:20	SAS
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		08/23/12 09:20	SAS
Specific conductance	umhos/cm	374	DEP FT1200	0.1	0.1		08/23/12 09:20	SAS
Dissolved Oxygen	mg/L	2.0	DEP FT1500	0.1	0.1		08/23/12 09:20	SAS
Inorganics								
Hydrogen Sulfide (Unionized)	mg/L	0.01 U	SM 4550SF	0.04	0.01		08/27/12 16:31	MEJ
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/30/12 10:21	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005	08/31/12 15:54	08/31/12 15:55	MMF
Carbonaceous BOD	mg/L	2 U	SM 5210B	2	2	08/24/12 14:40	08/29/12 13:53	MEJ
Chemical Oxygen Demand	mg/L	29	EPA 410.4	25	10	08/24/12 14:40	08/24/12 16:45	CDB
Chloride	mg/L	20	EPA 300.0	0.20	0.050		09/01/12 10:29	JAG
Nitrate+Nitrite (N)	mg/L	20	EPA 353.2	0.40	0.10		08/29/12 13:13	MMF
Phosphorous - Total as P	mg/L	0.032 I	SM 4500P-E	0.040	0.010	08/24/12 11:50	08/27/12 12:23	MMF
Sulfide	mg/L	0.10 U	SM 4500SF	0.40	0.10		08/27/12 16:31	MEJ
Total Alkalinity	mg/L	9.4	SM 2320B	8.0	2.0	08/28/12 10:00	08/28/12 12:05	AES
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	08/28/12 08:37	08/29/12 11:37	MMF
Total Suspended Solids	mg/L	2	SM 2540D	1	1	08/30/12 09:09	08/30/12 15:35	CMS
<u>Microbiology</u>								
Fecal Coliforms	CFU/100 ml	1 U	SM 9222D	1	1	08/23/12 14:02	08/24/12 12:37	HKG

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 **September 6, 2012 Work Order: 1209018**

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22414 - COD prep										
Blank (BH22414-BLK1)					Prepared 8	& Analyzed:	08/24/12			
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH22414-BS1)					Prepared 8	& Analyzed:	08/24/12			
Chemical Oxygen Demand	54	25	10	mg/L	50		108	90-110		
Matrix Spike (BH22414-MS1)		Source: 1	209017-01		Prepared 8	k Analyzed:	08/24/12			
Chemical Oxygen Demand	54	25	10	mg/L	50	11	86	85-115		
Matrix Spike Dup (BH22414-MSD	1)	Source: 1	209017-01		Prepared 8	k Analyzed:	08/24/12			
Chemical Oxygen Demand	54	25	10	mg/L	50	11	86	85-115	0	32
Batch BH22415 - Digestion fo	or TP by EPA 36	5.2/SM4500)PE							
Blank (BH22415-BLK1)					Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH22415-BS1)					Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.754	0.040	0.010	mg/L	0.80		94	90-110		
Matrix Spike (BH22415-MS1)		Source: 1	209476-08		Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.933	0.040	0.010	mg/L	1.0	ND	93	75-125		
Matrix Spike Dup (BH22415-MSD	1)	Source: 1	209476-08		Prepared:	08/24/12 Ar	nalyzed: 08	/27/12		
Phosphorous - Total as P	0.901	0.040	0.010	mg/L	1.0	ND	90	75-125	3	25
Batch BH22444 - BOD										
Blank (BH22444-BLK1)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	2 U	2	2	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 **September 6, 2012 Work Order: 1209018**

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte	reguit	I QL		Office	LCVCI	resuit	701 \L O	Liiiit3	IN D	Liiiit
Batch BH22444 - BOD										
Blank (BH22444-BLK2)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BH22444-BS1)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	190	2	2	mg/L	200		95	85-115		
LCS (BH22444-BS2)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	181	2	2	mg/L	200		90	85-115		
LCS Dup (BH22444-BSD1)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	184	2	2	mg/L	200		92	85-115	3	200
LCS Dup (BH22444-BSD2)					Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	180	2	2	mg/L	200		90	85-115	8.0	200
Duplicate (BH22444-DUP1)		Source: 1	209566-01		Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	140	2	2	mg/L		150			7	25
Duplicate (BH22444-DUP2)		Source: 1	209571-01		Prepared:	08/24/12 Ar	nalyzed: 08	/29/12		
Carbonaceous BOD	150	2	2	mg/L		180			19	25
Batch BH22745 - Sulfide prep										
Blank (BH22745-BLK1)					Prepared 8	& Analyzed:	08/27/12			
Sulfide	0.10 U	0.40	0.10	mg/L						
LCS (BH22745-BS1)					Prepared 8	k Analyzed:	08/27/12			
Sulfide	5.23	0.40	0.10	mg/L	5.0		105	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209018

A L - 4	Danish	DOI	MDL	1.1-24-	Spike	Source	0/ DEO	%REC	DDD	RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22745 - Sulfide prep										
Matrix Spike (BH22745-MS1)		Source: 1	209674-02		Prepared 8	& Analyzed:	08/27/12			
Sulfide	5.43	0.40	0.10	mg/L	5.0	0.910	90	85-115		
Matrix Spike Dup (BH22745-MSD1)		Source: 1	209674-02		Prepared 8	& Analyzed:	08/27/12			
Sulfide	5.43	0.40	0.10	mg/L	5.0	0.910	90	85-115	0	14
Batch BH22801 - Digestion for 3	ΓKN by EPA	351.2								
Blank (BH22801-BLK1)					Prepared:	08/28/12 Ar	nalyzed: 08	/29/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22801-BS1)					Prepared:	08/28/12 Ar	nalyzed: 08	/29/12		
Total Kjeldahl Nitrogen	2.38	0.20	0.05	mg/L	2.5		94	90-110		
Matrix Spike (BH22801-MS1)		Source: 1	209487-07		Prepared:	08/28/12 Ar	nalyzed: 08	/29/12		
Total Kjeldahl Nitrogen	3.17	0.20	0.05	mg/L	2.5	0.455	107	80-120		
Matrix Spike Dup (BH22801-MSD1)		Source: 1	209487-07		Prepared:	08/28/12 Ar	nalyzed: 08	/29/12		
Total Kjeldahl Nitrogen	3.09	0.20	0.05	mg/L	2.5	0.455	104	80-120	3	20
Batch BH22825 - alkalinity										
Blank (BH22825-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22825-BS1)					Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209018

			MDI		Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22825 - alkalinity										
Matrix Spike (BH22825-MS1)		Source: 1	209020-06		Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	130	8.0	2.0	mg/L	120	4.2	100	80-120		
Matrix Spike Dup (BH22825-MSD	1)	Source: 1	209020-06		Prepared 8	& Analyzed:	08/28/12			
Total Alkalinity	130	8.0	2.0	mg/L	120	4.2	100	80-120	0	26
Batch BH22843 - Nitrate 353.2	by seal									
Blank (BH22843-BLK1)					Prepared 8	& Analyzed:	08/29/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22843-BS1)					Prepared 8	& Analyzed:	08/29/12			
Nitrate+Nitrite (N)	0.832	0.04	0.01	mg/L	0.80		104	90-110		
Matrix Spike (BH22843-MS1)		Source: 1	209476-03		Prepared 8	& Analyzed:	08/29/12			
Nitrate+Nitrite (N)	1.22	0.04	0.01	mg/L	1.0	0.0664	115	77-119		
Matrix Spike Dup (BH22843-MSD	1)	Source: 1	209476-03		Prepared 8	& Analyzed:	08/29/12			
Nitrate+Nitrite (N)	1.22	0.04	0.01	mg/L	1.0	0.0664	116	77-119	0.4	20
Batch BH22931 - Ammonia by	SEAL									
Blank (BH22931-BLK1)					Prepared 8	& Analyzed:	08/30/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22931-BS1)					Prepared 8	& Analyzed:	08/30/12			
Ammonia as N	0.48	0.040	0.009	mg/L	0.50		96	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209018

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22931 - Ammonia by S	SEAL									
Matrix Spike (BH22931-MS1)		Source: 1	209015-20		Prepared 8	& Analyzed:	08/30/12			
Ammonia as N	0.50	0.040	0.009	mg/L	0.50	0.011	98	90-110		
Matrix Spike Dup (BH22931-MSD1)		Source: 1	209015-20		Prepared 8	& Analyzed:	08/30/12			
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	0.011	100	90-110	2	10
Batch BH23046 - TSS prep										
Blank (BH23046-BLK1)					Prepared 8	& Analyzed:	08/30/12			
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BH23046-BS1)					Prepared 8	& Analyzed:	08/30/12			
Total Suspended Solids	51.5	1	1	mg/L	50		103	85-115		
Duplicate (BH23046-DUP1)		Source: 1	209672-01		Prepared 8	& Analyzed:	08/30/12			
Total Suspended Solids	150	1	1	mg/L		165			10	30
Duplicate (BH23046-DUP2)		Source: 1	209714-01		Prepared 8	& Analyzed: (08/30/12			
Total Suspended Solids	117	1	1	mg/L		122			5	30
Batch BH23108 - Ion Chromato	graphy 300.0	Prep								
Blank (BH23108-BLK1)					Prepared 8	& Analyzed:	09/01/12			
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH23108-BS1)					Prepared 8	& Analyzed:	09/01/12			
Chloride	2.96	0.20	0.050	mg/L	3.0		99	85-115		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209018

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH23108 - Ion Chroma	tography 300.0	Prep								
LCS Dup (BH23108-BSD1)					Prepared 8	& Analyzed:	09/01/12			
Chloride	2.92	0.20	0.050	mg/L	3.0		97	85-115	1	200
Matrix Spike (BH23108-MS1)		Source: '	1209852-02		Prepared 8	& Analyzed:	09/01/12			
Chloride	42.2 +O	0.20	0.050	mg/L	3.0	42.1	3	80-120		
Matrix Spike (BH23108-MS2)		Source: 1	1209018-01		Prepared 8	& Analyzed:	09/01/12			
Chloride	22.4	0.20	0.050	mg/L	3.0	19.7	90	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209018

Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22328 - FC-MF										
Blank (BH22328-BLK1)					Prepared:	08/23/12 Ar	nalyzed: 08/	/24/12		
Fecal Coliforms	1 U	1	1	CFU/100 n	nl					
Duplicate (BH22328-DUP1)		Source: 1	208986-	01	Prepared:	08/23/12 Ar	nalyzed: 08/	/24/12		
Fecal Coliforms	81,000	1	1	CFU/100 n	nl	92000			13	200

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209018

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

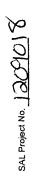
A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

+O Matrix spike source sample was over the reccommended range for the method.

Finder



SOUTHERN ANALYTICAL LABORATORIES, INC. 110BAVVEWBOULEVARD. OLD SMAR, FL. 34877 813-855-1844 fex 813-855-2218

Time Composite Composite X Grab TLP, Cool TLP, Cool TLP, Cool TLP, Nach, NH4, COD, TP TKN, Nox, NH4, COD, TS TKN, Nox, NH4, COD, TS TKN, Nox, NH4, COD, TS TS5mL P, Na,S2,O3 TSML P, Na,S2,O3 TSML P,	Composite Composite Composite Composite Composite Composite Containity, CBOD, TSS TLP, Nach, Nax, NH4, COD, TP TLP, Nach, Nax, NH4, COD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, Nax, NH4, CDD, TSS TLP, Nach, N	Composite	Matrix Composite Camposite Carbo Side TiCP, Cool, TP TiCP, Way, NH4, COD, TS TiCP, Way, NH4, COD, TS TiCP, Way, NH4, COD, TS TiCP, Way, NH4, COD, TS TiCP, Way, NH4, COD, TS TiCP, Way, NH4, COD, TS TiCP, Way, CBOD, TSS TiCP, Way, NH4, CDD, TSS TiCP, Way, NH4, CDD, TSS TiCP, Way, NH4, CDD, TSS TiCP, Way, CBOD, TSS	© Matrix Composite X Grab TKN, Nox, NH4, COD, TP CI, Alkalininy, CBOD, TSS TKN, Nox, NH4, COD, TS TLP, Cool TLP, Cool TLP, Cool TLP, Cool TLP, Cool TLP, Cool TLP, Machinery, CBOD, TSS Marie Paragraphy TEC.MF DECONTAINER DE	Description Composition C	Haz	Hazen and Sawyer							Contact / Phone:	Jone:					
Composite X Grab S50mL P, H ₂ SO ₄ TKN, Nox, NH4, COD, TP TLP, Cool TLP, NaOH, Zn Acetate TLP, NaOH, Zn Acetate TSmL P, Na ₂ S ₂ O ₃ TC-MF TC-MF TC-MF Temperature Temperature Tool Conductivity Tool Conductivity Tool Conductivity Tool Conductivity	O Matrix Composite X Grab 250mL P, H₂SO₄ 11P, CoO₁ 11P, NaOH, NH4, COD, TP 11P, NaOH, NH4, COD, TP 11P, NaOH, Zn Acetate 125mL P, Na2S₂O₃ 125mL P, NaOH, Zn Acetate 125mL P, NaSH, Na₂S₂O₃ 125mL P, NaSH, NayBri	Composite Composite Composite Composite Constant P, H ₂ SO ₄ TKN, Nox, NH4, COD, TP TKN, Nox, NH4, COD, TS TKN, Nox, NH4, COD, TS TKN, Nox, NH4, COD, TS TKN, Nox, NH4, COD, TS TKN, Nox, NH4, COD, TS TRN, NOX, NH4, COD, TS TRN, NOX, N	Matrix Composite Composite Consposite Consposite Consposite Trky, Nox, NH4, COD, TP Trky, Nox, NH4, COD, TS Trky, NH4, COD, TS Trky, NH4, COD,	OMANTA MATRIX Composite X Grab TkN, Nox, NH4, COD, TP TkN, Nox, NH4, COD, TS TkN, Nox, NH4, COD, TS TkN, Nox, NH4, COD, TS TkN, Nox, NH4, COD, TP TkN, Nox, NH4, COD, TS TkN, Nox, NH4, COD, TS TkN, Nox, NH4, COD, TP TkN, Nox, Nh4, COD, TR TkN, Nox, Nh4, COD, TR TkN, Nox, Nh4, COD, TR TkN, Nh4, COD, TkN, Th TkN, Nh4, COD, TkN,	PARAMETER CONTAINER DESCRIPTION Composite X Grab Composite X Grab Tec., Na Tec.,	W Test	S&GW Test Facility SE#2													
© Matrix Composite X Grab TLP, Cool TLP, Cool TLP, MacOH, CBOD, TS TLP, MacOH, CBOD, TS TLP, MacOH, Zn Acetate TLP, MacOH, MacOH, MacOH, MacOH, MacOH, MacOH, MacOH, MacOH, MacOH, MacOH, MacOH, MacOH, MacOH, MacOH, Ma	O Matrix Composite X Grab TLP, Cool TLP, NaOH, Zn Acetate TLP, NaOH, Zn Acetate TLP, NaOH, Zn Acetate TLP, NaOH, Zn Acetate TLP, NaOH, Zn Acetate TLP, NaOH, Zn Acetate TLP, NaOH, Zn Acetate TLP, NaOH, Zn Acetate TLP, NaOH, Zn Acetate TLP, NaOH, Zn Acetate TLP, NaOH, Zn Acetate TLP, NaOH, Zn Acetate TLP, NaOH, Zn Acetate TLP, NaOH, Zn Acetate TLP, NaoH, Zn Acetate TLP,	Matrix Composite X Grab X Grab TLP, Cool TLP, Cool TLP, NaCOL, TS TLP, NaCOL, TS TLP, NacOL, TS TLP,	O Matrix Composite ∴ Grab ∴ Grab 1LP, Cool 1LP, C	Composite Composite Composite Composite Composite The Nach H4: COD. TP The Nach Cod. TS The Nac	Diserfine: Own Matrix Diserfine: Own Matrix Own Ma	2						PARA	METER / (CONTAINE	R DESCRI	PTION				
GW Matrix Composite X Grab TLP, Cool 1LP, Cool 1LP, Nox, N 1LP, NaCH, 1LP, NaCH, 1LP, NaCH, 125mL P, Na 125mL P,	Composite X Grab Composite X Grab TRN, Nox, N TRN, N	Composite X Grab X Grab TLP, Cool 1LP, Cool 1LP, NaoH, 1LP, NaoH, 125mL P, Na 125mL P, N	Composite X Grab X Grab TLP, Cool TLP, NaOH, NaX, N TLP, NaOH, TLP, NaOH	Composite X Grab Composite X Grab TrP, Noor, N TrP, NoOH, N TrP, NoOH, N TrP, NoOH, N TrP, NoOH, N TrP, NoOH, N TrP, NoOH, N TrP, NoOH, N TrP, NoOH, N TrP, NoOH, N TrP, NOOH, N TrP, NOOH, N TrP, NOOH, N TrP, NOOH, N TrP, NOOH, N TrP, NOOH, N TrP, NOOH, N TrP, NOOH, N TrP, NOOH, N TrP, NOOH, N TrP, NOOH, N TrP, NOOH, N TrP, NOOH, N TrP, NOOH, N TrP, NOOH, N TrP, N Tr	Ow Watrix Date fine						etateo nZ	^c O ^z S ^z								
GW X 1 1 1 2 2025:4 374.5	GW X 1 1 1 2 2.025.4 374.5	GW X 1 1 1 2 2.025.4 374.	GW X 1 1 1 2 2025.4 374.5	GW X 1 1 1 2 2.025.4 374.	Samples fract upon arrival? She fract	Date		Composite	250mL P, H ₂	1LP, Cool	1LP, NaOH, R ₂ H		· · · · · · · · · · · · · · · · · · ·						 Temperature	
					DaterTime: DaterTime: DaterTime: DaterTime: DaterTime: DaterTime: Proper preservatives indicated? Object Time: Proper containers used? NA Proper containers used? NA NA NA NA NA NA NA NA NA N	£38.0	6853R 8920 GV	>		+	-	2					2		7269	
					Date-Time: Date-Time: Date-Time: Date-Time: Date-Time: Received on ice? Temp. Received on ice? Temp. Proper preservatives indicated? N NA Rec within holding time? Volatiles rec'd within holding time? Volatiles rec'd within headspace? Y N NA Poper comtaners used? (Y) N NA Rober containers used?			+						-	-			-		
					Date/free: Date/free: Date/free: Date/free: Date/free: Date/free: Date/free: Date/free: Date/free: Proper containers used? Proper containers used? Proper containers used? Proper containers used? Proper containers used?			H												
					DaterTime: 1835 Seal intact? ObjectTime: DaterTime: DaterTime: DaterTime: DaterTime: DaterTime: DaterTime: Proper containers used? (*) N NA Proper containers used? (*) N NA															
Date/Time: 1835 Seal intact?	Date/fine 1835 Seal intact?	Collectine 1835 Seal intact?	Date/Time: 1835 Seal intact?		Received on ice? Temp Proper preservatives indicated? Rec'd within holding time? Volatiles rec'd w/out headspace? Proper containers used? (*) N NA	70C Received:		Date/	ille:	٥		Samples ir	ntact upon ar	rival?	Ø	¥ 2 2				
Date/Time 1835 CS / S / Z Seal intact? Date/Time.	Date/fine 1835 Seal intact? OST 8 72 Samples intact upon arrival?	Constitute 1835 Seal intact? COST ST C. Samples intact upon arrival?	Date/Time 1835 Seal intact? OS' (S' (Z - Samples intact upon arrival?)	Date/Time: Samples intact upon arrival?	Proper preservatives indicated? Rec'd within holding time? Volatiles rec'd w/out headspace? Y N (AA) Proper containers used? Y N NA	082312						Received	onice? Tem		E	N N N				
Date/Time: CS' (S' (Z _ Samples intact) Call (S	Seal intact? Osteffme: 1835 Seal intact? Samples intact upon arrival? Received on ice? Temp.	Seal intact? CS' (S' (Z - Samples intact) Date/Time: Received on ice? Temp.	Seal intact? OST (S' (2	Date/Time: Samples intact upon arrival? Received on ice? Temp	Rec'd within holding time? Volatiles rec'd w/out headspace? Y N NA Proper containers used? Y N NA	Received:		Date/	rime:			Proper pre	servatives ir	ndicated?	S)	Z Z				
Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time:	Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Proper preservatives indicated?	Seal intact? Oste/Time: Date/Time: Date/Time: Proper preservatives indicated?	Seal intact? COST S' TC Samples intact upon arrival? Samples intact upon arrival? Received on ice? Temp Date/Time: Proper preservatives indicated?	Date/Time: Date/Time: Date/Time: Proper preservatives indicated?	Proper containers used?	Received:		Date/	īme:			Rec'd with Votatiles re	iin holding tin ec'd w/out h	æ? eadspace?	⊙ ≻	₹ Z Z Z				· -
Date/Time: Date/Date/Date/Date/Date/Date/Date/Date/	Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Volatiles rec'd w/thin holding time? Volatiles rec'd w/out headspace?	Seal intact? ObterTime: DaterTime: DaterTime: DaterTime: DaterTime: DaterTime: Nobalies rec'd within holding time? Volatiles rec'd wout headspace?	Sead intact? Objectime: DaterTime: DaterTime: DaterTime: DaterTime: Nober preservatives indicated? Rec'd within holding time? Volatiles rec'd w/out headspace?	Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Accived within holding time? Volatiles rec'd w/thin holding time?		Received:		Date/	lime:			Proper cor	ntainers usec	2 ;	\odot) ž			7	1209018

SOUTHERN ANALYTICAL LABORATORIES, INC. 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 B13-855-1844 FAX B13-855-2218

	,			CONTRA	17.1 L.I.	SAMPLI	110 200				
Client Name:	F	lazen and Sawye	r	Location:				Contact: Phone:			
Date Sampled	08	12312		SAL Project	1200	1018		Project Name	S&GV	V Test Facility	SE #2
Well Number		TA6-PZ-I			8	\ \		GPS LAT			
				D	URGING	DATA		GPS LONG			
WELL		WELL		Screen	UKGING	DAIA		Static Depth		PURGE	
DIAMETER (Inches)	1,0	CAPACITY (gal/ft)	0.04	Interval (Feet)	UNK	То	UNK	to Water (Feet)	8.40	PUMP CODE	GP GF IBP
TOTAL WELL DEPTH (Feet)	14.78	REFERENCE ELEVATION (NGVD)		GROUND ELEV/ (REFERENC	ATION			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
	hnique: q Sul	omerged Screen) q Submer	ged Screen (1	EQ Volume, 3	3, 3 Minutes)	q Partially Sub	merged Scree		minutes)
	OLUME = (TO	TAL DEPTH - ST		x WELL CAPI	CITY =	3 WELL			5 WELL		<u> </u>
VOLUME	0.7	55	1/4 WELL VOLUME			VOLUMES	0.7		VOLUMES		
	1	EQUIPMENT VO	DLUME = PUN	IP VOLUME +	(TUBING CA	PACITY X TUI	BING LEGNTH	l) + FLOW CEL	L VOLUME		
PUMP VOLUME			TUBING LEGNTH		!	FLOW CELL VOLUME			EQUIPMEN T VOLUME		
INITIAL TUBI IN WELL	-		l .	NG LEGNTH L (FEET)		PURGE TIME START	0910	PURGE TIME END	0919	TOTAL PURGED	0.90
INST. ID	\times	\times	\times	\times	SAL-SAM-63-	SAL-SAM - 65 O _/_	SAL-SAM-63 <u>O/</u>	SAL-SAM-55-	SAL-SAM- 0_ <u></u>	\times	\geq
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (οC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe
0913	0.30	0.70	0.10	9.00	5.4	26.9	367.8	1.84	15.5	CLEN	NOW
0916	0.30	0,60		1	5.4	26.9	369.5	1.95	14.6		
0919	0.30	0.90	1		5.4	26.9	3945	2.02	13.7	<u> </u>	1
			:								
		Capacity (gallons/				16, 3"=0.37	, 4"=0.65,			"5.88	
TUBI	NG INSIDE DI	A. CAPACITY (Ga	al./Ft.): 1/8" =			/4" = 0.0026;	5/16" = 0.00	4; 3/8" = 0.00	06; 1/2" = 0.	010; 5/8" =	0.016
				S	AMPLIN	T		T			
-	Y / COMPANY RINT)		SAL	_			PLER(S) ATURES:	5	7	/	
TUBING MAT	TERIAL CODE LE ONE)	PP PE N	P TD TT		TUBING WELL (FEET)			1	UMP FLOW mL/min)		
SAMPLING INITIATED	0920	SAMPLING ENDED	0921	FIELD CLEANED	Y 🚯	CLEANING STEPS					
FIELD FILTERED?	Y 🚱	FILTER SIZE (µm)		DUPLICATE	Y (N)		LECTED BY SE FLOW?	Y N (N/A		COLLECTER GH TRAP?	YN
PRESE	RVATION O IN FIELD?	Ø N N/A		SERVATIVES DED							
	THER	dea	r,7	8.							
COM	MENTS										
COIVII											

Reviewed By:

Date:

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209008

Laboratory Report

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description		FB-Tap						
Matrix		Drinking Water						
SAL Sample Number		1209008-01						
Date/Time Collected		08/20/12 07:45						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 14:30	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chloride	mg/L	22	EPA 300.0	0.20	0.050		08/23/12 01:16	JAG
Nitrate+Nitrite (N)	mg/L	0.03 1	EPA 353.2	0.04	0.01		08/22/12 12:15	MMF
Total Alkalinity	mg/L	120	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 13:31	MMF
Sample Description		FB-DI						
Matrix		Reagent Water						
SAL Sample Number		1209008-02						
Date/Time Collected		08/20/12 07:35						
Collected by		Sean Schmidt						
Date/Time Received		08/20/12 15:10						
<u>Inorganics</u>								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 14:32	MMF
Ammonium as NH4	mg/L	0.005 U	EPA 350.1	0.01	0.005		08/27/12 13:15	MEJ
Chloride	mg/L	0.057 l	EPA 300.0	0.20	0.050		08/23/12 01:16	JAG
Nitrate+Nitrite (N)	mg/L	0.01 U	EPA 353.2	0.04	0.01		08/22/12 12:17	MMF
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	08/21/12 09:00	08/21/12 15:38	AES
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	08/21/12 16:13	08/23/12 15:07	MMF
Sample Description		ЕВ						
Matrix		Reagent Water						
SAL Sample Number		1209008-03						
Date/Time Collected		08/20/12 07:30						
Collected by Date/Time Received		Sean Schmidt 08/20/12 15:10						
Inorganics								
Ammonia as N	mg/L	0.009 U	EPA 350.1	0.040	0.009		08/21/12 14:34	MMF
Ammonium as NH4	mg/L	0.009 U	EPA 350.1	0.040	0.005		08/27/12 13:15	MEJ
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/21/12 12:10	08/21/12 13:13	CDB
Chloride	mg/L	0.050 U	EPA 300.0	0.20	0.050	30/21/12 12:10	08/21/12 16:02	JAG
Fluoride	mg/L	0.010 U	EPA 300.0	0.20	0.010		08/21/12 16:02	JAG
Nitrate (as N)	mg/L	0.010 U	EPA 300.0	0.040	0.010		08/21/12 16:02	JAG
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		08/21/12 16:02	JAG
Sulfate	mg/L	0.20 U	EPA 300.0	0.60	0.20		08/21/12 16:02	JAG
	9/ ⊏	0.20 0		0.00	0.20		30/21/12 10:02	5, 10

FDOH Laboratory No.E84129 NELAP Accredited

Francis I. Daniels, Laboratory Director Leslie C. Boardman, Q.A. Manager

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209008

Laboratory Report

Project Name		S&GW Test	Facility SE#2					
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Ву
Sample Description Matrix SAL Sample Number Date/Time Collected Collected by Date/Time Received		EB Reagent Water 1209008-03 08/20/12 07:30 Sean Schmidt 08/20/12 15:10						
Total Alkalinity Total Kjeldahl Nitrogen Total Organic Carbon	mg/L mg/L mg/L	2.0 U 0.05 U 0.50 U	SM 2320B EPA 351.2 SM 5310B	8.0 0.20 1.0	2.0 0.05 0.50	08/21/12 09:00 08/21/12 16:13	08/21/12 15:38 08/23/12 13:35 08/26/12 11:11	AES MMF MEJ
Inorganic, Dissolved Dissolved Organic Carbon	mg/L	0.50 U	SM 5310B	1.0	0.50		08/28/12 16:37	MEJ
Metals Boron Calcium Iron	mg/L mg/L mg/L	0.050 U 0.042 U 0.020 U	EPA 200.7 EPA 200.7 EPA 200.7	0.10 0.50 0.10	0.050 0.042 0.020	08/24/12 10:32 08/24/12 10:32 08/24/12 10:32	08/24/12 12:51 08/24/12 12:51 08/24/12 12:51	VWC VWC
Magnesium Manganese	mg/L mg/L	0.020 U 0.020 U 0.0010 U	EPA 200.7 EPA 200.7	0.50 0.010	0.020 0.020 0.0010	08/24/12 10:32	08/24/12 12:51 08/24/12 12:51 08/24/12 12:51	VWC
Potassium Sodium	mg/L mg/L	0.010 U 0.13 U	EPA 200.7 EPA 200.7	0.050 0.50	0.010 0.13	08/24/12 10:32 08/24/12 10:32	08/24/12 12:51 08/24/12 12:51	VWC

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209008

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
- Tidiyic	resuit	I QL	WIDE	Office	LCVCI	resuit	701 KLO	Lillito	TO D	Liiiit
Batch BH22118 - COD prep										
Blank (BH22118-BLK1)					Prepared 8	k Analyzed:	08/21/12			
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH22118-BS1)					Prepared 8	k Analyzed:	08/21/12			
Chemical Oxygen Demand	47	25	10	mg/L	50		94	90-110		
Matrix Spike (BH22118-MS1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/21/12			
Chemical Oxygen Demand	47	25	10	mg/L	50	ND	94	85-115		
Matrix Spike Dup (BH22118-MSD1))	Source: 1	209008-03		Prepared 8	k Analyzed:	08/21/12			
Chemical Oxygen Demand	49	25	10	mg/L	50	ND	98	85-115	4	32
Batch BH22122 - Ammonia by	SEAL									
Blank (BH22122-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Ammonia as N	0.009 U	0.040	0.009	mg/L						
LCS (BH22122-BS1)					Prepared 8	k Analyzed:	08/21/12			
Ammonia as N	0.54	0.040	0.009	mg/L	0.50		108	90-110		
Matrix Spike (BH22122-MS1)		Source: 1	209008-01		Prepared 8	k Analyzed:	08/21/12			
Ammonia as N	0.52	0.040	0.009	mg/L	0.50	ND	104	90-110		
Matrix Spike Dup (BH22122-MSD1))	Source: 1	209008-01		Prepared 8	k Analyzed:	08/21/12			
Ammonia as N	0.51	0.040	0.009	mg/L	0.50	ND	103	90-110	2	10
Batch BH22126 - TOC prep										
Blank (BH22126-BLK1)					Prepared 8	& Analyzed:	08/26/12			
Total Organic Carbon	0.50 U	1.0	0.50	mg/L						

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209008

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
riidiyte	resuit	T QL		Office	LCVCI	result	701120	Liiiito	TUB	Littie
Batch BH22126 - TOC prep										
LCS (BH22126-BS1)					Prepared 8	& Analyzed:	08/26/12			
Total Organic Carbon	10.4	1.0	0.50	mg/L	10		104	90-110		
Matrix Spike (BH22126-MS1)		Source: 1	209174-01		Prepared 8	& Analyzed:	08/26/12			
Total Organic Carbon	9.38	1.0	0.50	mg/L	10	ND	94	85-115		
Matrix Spike Dup (BH22126-MSD1)	Source: 1	209174-01		Prepared 8	& Analyzed:	08/26/12			
Total Organic Carbon	9.58	1.0	0.50	mg/L	10	ND	96	85-115	2	10
Batch BH22136 - alkalinity										
Blank (BH22136-BLK1)					Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BH22136-BLK2)					Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH22136-BS1)					Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
LCS (BH22136-BS2)					Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH22136-MS1)		Source: 1	209336-06		Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120		
Matrix Spike (BH22136-MS2)		Source: 1	209336-07		Prepared 8	& Analyzed:	08/21/12			
Total Alkalinity	250	8.0	2.0	mg/L	120	140	86	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209008

A 1.	D "	DOL	MDI		Spike	Source	0/ DE0	%REC	DDD	RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22136 - alkalinity										
Matrix Spike Dup (BH22136-MSD1)		Source: 1	209336-06		Prepared 8	k Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	0	26
Matrix Spike Dup (BH22136-MSD2)		Source: 1	209336-07		Prepared 8	k Analyzed:	08/21/12			
Total Alkalinity	260	8.0	2.0	mg/L	120	140	95	80-120	4	26
Batch BH22142 - Digestion for 1	TKN by EPA	351.2								
Blank (BH22142-BLK1)					Prepared:	08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH22142-BS1)					Prepared:	08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	2.42	0.20	0.05	mg/L	2.5		96	90-110		
Matrix Spike (BH22142-MS1)		Source: 1	209008-01		Prepared:	08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	2.35	0.20	0.05	mg/L	2.5	ND	93	80-120		
Matrix Spike Dup (BH22142-MSD1)		Source: 1	209008-01		Prepared:	08/21/12 Ar	nalyzed: 08	/23/12		
Total Kjeldahl Nitrogen	2.37	0.20	0.05	mg/L	2.5	ND	93	80-120	0.7	20
Batch BH22207 - Nitrate 353.2 b	y seal									
Blank (BH22207-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH22207-BS1)					Prepared 8	k Analyzed:	08/22/12			
Nitrate+Nitrite (N)	0.802	0.04	0.01	mg/L	0.80		100	90-110		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209008

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22207 - Nitrate 353.2	by seal									
Matrix Spike (BH22207-MS1)		Source: 1	209008-01		Prepared 8	k Analyzed:	08/22/12			
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0281	106	77-119		
Matrix Spike Dup (BH22207-MSD	1)	Source: 1	209008-01		Prepared 8	k Analyzed:	08/22/12			
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0281	106	77-119	0.2	20
Batch BH22211 - Ion Chromat	ography 300.0	Prep								
Blank (BH22211-BLK1)					Prepared 8	& Analyzed:	08/22/12			
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
LCS (BH22211-BS1)					Prepared 8	k Analyzed:	08/22/12			
Orthophosphate as P	0.990	0.040	0.010	mg/L	0.90		110	85-115		
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115		
Fluoride	0.908	0.040	0.010	mg/L	0.90		101	85-115		
Chloride	2.92	0.20	0.050	mg/L	3.0		97	85-115		
Sulfate	8.84	0.60	0.20	mg/L	9.0		98	85-115		
LCS Dup (BH22211-BSD1)					Prepared 8	& Analyzed:	08/22/12			
Sulfate	8.83	0.60	0.20	mg/L	9.0		98	85-115	0.1	200
Fluoride	0.921	0.040	0.010	mg/L	0.90		102	85-115	1	200
Nitrate (as N)	1.68	0.04	0.01	mg/L	1.7		99	85-115	1	200
Chloride	2.87	0.20	0.050	mg/L	3.0		96	85-115	2	200
Orthophosphate as P	0.962	0.040	0.010	mg/L	0.90		107	85-115	3	200

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209008

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
· ·										
Batch BH22211 - Ion Chroma	tography 300.0 F	тер								
Matrix Spike (BH22211-MS1)		Source: 1	209369-01		Prepared 8	Analyzed:	08/22/12			
Orthophosphate as P	1.27	0.040	0.010	mg/L	0.90	0.361	101	85-115		
Sulfate	109 +O	0.60	0.20	mg/L	9.0	107	22	85-115		
Nitrate (as N)	2.50	0.04	0.01	mg/L	1.7	0.846	97	85-115		
Chloride	0.050 U,+O	0.20	0.050	mg/L	3.0	ND		80-120		
Fluoride	1.20	0.040	0.010	mg/L	0.90	0.280	102	85-115		
Matrix Spike (BH22211-MS2)		Source: 1	208997-05		Prepared 8	Analyzed:	08/22/12			
Nitrate (as N)	31.7	0.04	0.01	mg/L	17	15.0	98	85-115		
Fluoride	9.02	0.040	0.010	mg/L	9.0	0.138	99	85-115		
Orthophosphate as P	8.65	0.040	0.010	mg/L	9.0	0.111	95	85-115		
Sulfate	142	0.60	0.20	mg/L	90	55.4	96	85-115		
Chloride	93.7	0.20	0.050	mg/L	30	63.0	102	80-120		
Batch BH22212 - Ion Chroma	tography 300.0 F	Prep								
Blank (BH22212-BLK1)					Prepared 8	Analyzed:	08/23/12			
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BH22212-BS1)					Prepared 8	Analyzed:	08/23/12			
Chloride	2.89	0.20	0.050	mg/L	3.0		96	85-115		
LCS Dup (BH22212-BSD1)					Prepared 8	Analyzed:	08/23/12			
Chloride	2.88	0.20	0.050	mg/L	3.0		96	85-115	0.3	200
Matrix Spike (BH22212-MS1)		Source: 1	209013-04		Prepared 8	Analyzed:	08/23/12			
Chloride	16.5	0.20	0.050	mg/L	3.0	13.5	100	80-120		

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209008

Inorganics - Quality Control

					Spike	Source		%REC		RPD	
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BH22212 - Ion Chromatography 300.0 Prep

Matrix Spike (BH22212-MS2)	Source: 1	209013-17	Prepared & Analyzed: 08/23/12					
Chloride	17.8	0.20	0.050	mg/L	3.0	15.1	90	80-120

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209008

Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Batch BH22124 - TOC prep										
Blank (BH22124-BLK1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BH22124-BS1)					Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.2	1.0	0.50	mg/L	10		102	90-110		
Matrix Spike (BH22124-MS1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	10.0	1.0	0.50	mg/L	10	ND	100	85-125		
Matrix Spike Dup (BH22124-MSD1)		Source: 1	209008-03		Prepared 8	& Analyzed:	08/28/12			
Dissolved Organic Carbon	9.67	1.0	0.50	mg/L	10	ND	97	85-125	4	25

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209008

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH22411 - Metals Prep	aration for EPA	Method 20	00.7							
Blank (BH22411-BLK1)					Prepared 8	& Analyzed:	08/24/12			
Magnesium	0.020 U	0.50	0.020	mg/L						
Sodium	0.13 U	0.50	0.13	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Potassium	0.010 U	0.050	0.010	mg/L						
Calcium	0.042 U	0.50	0.042	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
LCS (BH22411-BS1)					Prepared 8	& Analyzed:	08/24/12			
Potassium	19	0.050	0.010	mg/L	20		96	85-115		
Boron	0.41	0.10	0.050	mg/L	0.40		102	85-115		
Calcium	21	0.50	0.042	mg/L	20		103	85-115		
Magnesium	21	0.50	0.020	mg/L	20		103	85-115		
Manganese	0.40	0.010	0.0010	mg/L	0.40		101	85-115		
Sodium	20	0.50	0.13	mg/L	20		102	85-115		
Iron	8.2	0.10	0.020	mg/L	8.0		102	85-115		
Matrix Spike (BH22411-MS1)		Source: 1	1209336-01		Prepared 8	& Analyzed:	08/24/12			
Boron	0.46	0.10	0.050	mg/L	0.40	0.072	97	70-130		
Potassium	24	0.050	0.010	mg/L	20	4.4	98	70-130		
Magnesium	34	0.50	0.020	mg/L	20	15	95	70-130		
Calcium	79	0.50	0.042	mg/L	20	64	74	70-130		
Iron	8.4	0.10	0.020	mg/L	8.0	ND	105	70-130		
Manganese	0.41	0.010	0.0010	mg/L	0.40	ND	103	70-130		
Sodium	95 J5	0.50	0.13	mg/L	20	83	62	70-130		
Matrix Spike (BH22411-MS2)		Source:	1209375-01		Prepared 8	& Analyzed:	08/24/12			
Boron	0.37	0.10	0.050	mg/L	0.40	ND	92	70-130	<u> </u>	
Magnesium	20	0.50	0.020	mg/L	20	0.86	96	70-130		
Calcium	22	0.50	0.042	mg/L	20	3.5	93	70-130		
Iron	7.6	0.10	0.020	mg/L	8.0	ND	96	70-130		
Manganese	0.38	0.010	0.0010	mg/L	0.40	0.0065	93	70-130		
Sodium	24	0.50	0.13	mg/L	20	4.1	97	70-130		
Potassium	20	0.050	0.010	mg/L	20	0.78	95	70-130		

813-855-1844 FAX 813-855-2218 110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619

September 6, 2012 Work Order: 1209008

Metals - Quality Control

					Spike	Source		%REC		RPD
Analyte	Result	PQL	MDL	Units	Level	Result	%REC	Limits	RPD	Limit
Batch BH22411 - Metals Prepara	ation for EPA	Method 20	0.7							
Matrix Spike Dup (BH22411-MSD1)		Source: 1	209336-01		Prepared 8	& Analyzed:	08/24/12			
Calcium	78	0.50	0.042	mg/L	20	64	70	70-130	0.9	30
Boron	0.43	0.10	0.050	mg/L	0.40	0.072	89	70-130	7	30
Magnesium	33	0.50	0.020	mg/L	20	15	91	70-130	2	30
Iron	7.7	0.10	0.020	mg/L	8.0	ND	97	70-130	8	30
Potassium	23	0.050	0.010	mg/L	20	4.4	95	70-130	2	30
Manganese	0.38	0.010	0.0010	mg/L	0.40	ND	94	70-130	9	30
Sodium	97 J5	0.50	0.13	mg/L	20	83	69	70-130	1	30
Matrix Spike Dup (BH22411-MSD2)		Source: 1	209375-01		Prepared 8	& Analyzed:	08/24/12			
Sodium	22	0.50	0.13	mg/L	20	4.1	91	70-130	6	30
Calcium	22	0.50	0.042	mg/L	20	3.5	95	70-130	1	30
Magnesium	20	0.50	0.020	mg/L	20	0.86	97	70-130	1	30
Iron	7.6	0.10	0.020	mg/L	8.0	ND	95	70-130	0.5	30
Potassium	19	0.050	0.010	mg/L	20	0.78	92	70-130	3	30
Manganese	0.38	0.010	0.0010	mg/L	0.40	0.0065	92	70-130	0.5	30
Boron	0.37	0.10	0.050	mg/L	0.40	ND	92	70-130	0.7	30

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Hazen and Sawyer 10002 Princess Palm Ave, Suite 200 Tampa, FL 33619 September 6, 2012 Work Order: 1209008

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

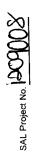
A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

- Q Sample held beyond the accepted holding time.
- J5 Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.
- +O Matrix spike source sample was over the reccommended range for the method.

Finder



SOUTHERN ANALYTICAL LABORATORIES, INC. 110BAYVEWBOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

										Cont	Contact / Phone							
Client Name	Hazen a	Hazen and Sawyer																
Project Name / Location																		
	S&GW	S&GW Test Facility SE#2	, SE#2															
Samplers: (Signature)	N	B							PARAME	TER / CO	PARAMETER / CONTAINER DESCRIPTION	DESCRIP	NOIT				}	
Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water	astewater e SO-Soil ater O-Other									IS	ИОЗ д. Мп, К, Иа						ə	ainers (Total (noits:
Sample Description	rtion	Date	əmiT	XintsM	Composite Grab	250mL P, H2 TKN, Nox, N	1LP, Cool Cl, Alkalinity 250mL P, H	1KN, Nox, N	OP, SO4 250mLaG, C	DOC 40mLaV, HC TOC	250mL P, H			DO	Hq	Conductivity	Temperatur	No. of Cont
01 FB-Tap		5	07.45		+	-	 							2.9	2.90 6.74550176	7.55	9/2	
		5x2012 0735	25.20	œ	×	-	-							3.74	14 6.8	0.5	24.5	
		0820 2020	0120	œ	×			-		2	-			3.74	14 6.8	2.0	18	
$\overline{}$																		
,	Date/Time: (930)	Received:	1		ate/Time	Date/Time:14 3 0			Seal intact?			z >	E					
graph.	8/8/2 198/198/19	Redelived	7	3	Oate/Time:	7/1/2		y T	Samples intact upon arrival?	ıpon arrival	٠.) § ∠ ≪) ≸					
SOLVING TO SERVING	575017	#	l		50	΄,		ě.	Received on ice? Temp	7 Temp	ļ) € ≥	¥					
Relinquished:	Date/Time:	Received:			Date/Time			& 	Proper preservatives indicated?	ttives indica	ited?	Ě	≨					
Relinquished:	Date/Time:	Received:			Date/Time			<u> </u>	Rec'd within holding time? Volatiles rec'd w/out headspace?	ding time?	pace?	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	∮ €					
Relinquished:	Date/Time:	Received:			Date/Time			å T	Proper containers used?	rs used?) §				~	1209008
Chain of Custody yle Rev.Date 11/1901											1	Cha	Chain of Custody	hpo				



Appendix F: Soil Analytical Results

Table F.1
Soil Analytical Results

ID#	Sample ID	Depth	BufpH	CEC	TN^1	TKN	ON ²	NH3-N	NOx-N	TIN ³	OrgMt	Est. TOC	P	K	Ca	Mg	Na
				calc	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%,calc	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1	TT	2-3'	7.86	2.09	61.95	61.10	59.16	1.94	0.85	2.78	0.69	0.46	74.85	6.10	54.01	8.78	10.76
2	TT	3.5-5.5'	7.93	1.60	8.94	8.11	6.59	1.52	0.83	2.35	0.31	0.21	59.39	8.61	43.99	5.50	12.68
3	TT	7.5-9.5	7.68	4.23	80.17	79.42	78.09	1.33	0.75	2.09	1.84	1.23	181.45	8.05	135.37	7.37	16.75
4	TT	10.5-12'	7.77	3.06	2.01	1.33	0.17	1.16	0.68	1.84	1.05	0.70	261.16	6.24	50.00	2.70	18.10
5	TT	12-14'	7.69	3.91	78.62	77.49	75.68	1.81	1.13	2.94	1.86	1.25	207.84	8.20	58.81	4.24	20.38
6	TT	14-15.5'	7.66	4.18	68.90	67.68	66.10	1.58	1.22	2.80	2.01	1.35	206.70	8.73	62.49	4.83	20.39
7	TT	15.5-16'	7.55	5.12	126.45	125.05	123.16	1.89	1.40	3.29	3.79	2.54	261.66	9.07	104.25	8.44	16.07
8	MM	2-2.5'	7.80	2.66	89.34	88.42	85.56	2.86	0.92	3.77	0.97	0.65	62.98	8.69	61.43	3.83	11.40
9	MM	2.5-4'	7.93	1.41	9.76	8.48	7.04	1.44	1.28	2.72	0.38	0.25	27.71	6.82	33.13	3.84	11.08
10	MM	4-5'	7.89	2.52	-6.65	-7.51	-9.48	1.97	0.86	2.82	0.50	0.34	50.58	31.25	54.51	4.25	12.27
11	MM	6-7'	7.31	6.74	365.91	363.95	361.83	2.12	1.96	4.08	4.56	3.06	174.57	7.21	44.71	2.86	18.18
12	MM	7-8'	7.31	6.62	208.93	207.84	206.10	1.74	1.09	2.83	5.45	3.65	55.95	7.74	45.33	2.00	15.13
13	MM	8-9'	7.18	7.83	224.01	223.22	221.63	1.59	0.79	2.38	6.90	4.62	40.88	8.15	56.32	3.25	17.39
14	MM	9-10'	7.38	6.18	159.26	158.21	156.68	1.53	1.05	2.58	6.44	4.31	83.84	6.75	46.47	2.64	18.24
15	MM	12.5-14'	7.52	5.18	96.14	95.42	94.30	1.12	0.72	1.84	3.38	2.26	196.54	6.77	55.24	3.54	19.75
16	MM	14.5-16'	7.48	5.72	99.63	98.84	97.95	0.89	0.79	1.68	5.51	3.69	480.47	11.52	74.31	4.25	19.83
17	MM	17-18'	7.48	5.95	153.33	151.73	150.44	1.29	1.60	2.89	4.36	2.92	291.80	16.78	98.28	7.52	18.47
18	MM	19-20'	7.55	4.88	94.36	93.08	91.84	1.24	1.28	2.51	2.97	1.99	549.39	9.22	69.52	4.18	15.13
19	MM	23-24'	7.61	4.56	68.43	66.30	64.85	1.45	2.13	3.58	1.97	1.32	627.02	9.81	76.67	5.25	17.46
20	MM	25-26'	7.82	3.13	75.47	73.10	71.98	1.12	2.37	3.50	2.03	1.36	727.00	10.05	82.41	6.88	22.18
21	MM	26-27'	7.65	4.45	58.69	57.13	56.44	0.69	1.56	2.26	1.56	1.05	520.46	8.62	73.16	6.09	23.34
22	Test Pit A horizon	0-6" bg	7.70	5.88	610.96	610.10	607.15	2.95	0.86	3.81	2.99	2.00	334.98	17.64	433.67	33.00	13.41
23	Test Pit A/E horizon	1' bg	7.74	3.10	186.16	185.58	184.02	1.56	0.58	2.14	1.52	1.02	92.08	7.96	51.80	4.06	12.12
24	Test Pit E horizon	3' bg	7.96	1.20	20.64	20.11	19.06	1.05	0.53	1.58	0.37	0.25	19.13	3.50	33.85	3.93	13.48
25	Test Pit Spodic	6' bg	7.30	6.56	380.60	379.37	378.14	1.23	1.23	2.46	5.58	3.74	155.35	3.34	39.36	2.57	15.16

T: for Value < MDL Non-detect

I: for Value >= MDL but < PQL

¹Total Nitrogen (TN) is a calculated value equal to the sum of TKN and NO_X.

²Organic Nitrogen (ON) is a calculated value equal to the difference of TKN and NH₃.

³Total Inorganic Nitrogen (TIN) is a calculated value equal to the sum of NH₃ and NO_X.

⁴TOC calculated value typical range 0.58-0.70 of organic matter, using 0.68



Appendix G: Water Quality Analytical Results

PAGE G-1

o:\44237-001\\Wpdocs\Report\Draft

Table G.1 Water Quality Analytical Results (August 20 through August 27, 2012)

Sample ID	ample Date/Tim	Temp (°C)	рН	Total Alkalinit (mg/L)	DO (mg/L)	Specific Conductance (µS)	TSS (mg/L)	CBOD ₅ (mg/L)	COD TN (mg/L) N) ¹	TKN (mg/L N)	Organio N (mg/L	NH ₃ -N	NOx	TIN (mg/L N) ³	ТР	Fecal TOC	DOC L) (mg/L			An	ions						Catio	ns			Hydrogen Sulfide (Unionized	Sulfide	Sucralos (ug/L)
																		F.	CI ⁻	NO ₃ -N	NO ₂ -N	PO ₄ -P	SO ₄	В	Ca	Fe	Mg	Mı	K	Na			
Effluent samples																																	
PNRS II STE - Tank 1	8/23/12 9:55		2 7.0	36					64.02			7 37	0.02	37.02	5.5				91													<u> </u>	2
STE Pump Tank	8/23/12 10:55	28.5					15		61.04			7 54		54.04	5.2				72				53										<u> </u>
STE Pump Tank - DUP	8/23/12 11:00		7.6	36	_	-	15	8	60.04			54	0.04			79000			68				55	5									<u> </u>
ATU Clarifier	8/23/12 10:45	27.8			0.2			8	35					23					72	_												<u> </u>	↓
ATU Eff Pump Tank	8/23/12 10:30	27.		22				8	36			2 23		34				0.33	_			5.7	49		_	2 0.07		0.0				<u> </u>	↓
ATU Eff Pump Tank - DUF	8/23/12 10:35	27.7	7 7.7	22	0.3	892	5	42	2 37	7 26	;	3 23	11	34	6.1	1800		0.38	8 72	2 1.6	6	6.1	51	0.14	1 5	5 <mark>0.08</mark>	<mark>38</mark> 1	0.0	27 2	3 6	4		
Soil moisture samples																																<u> </u>	
TA1-LY-12-S	8/20/12 9:00	28.7			6.7				14.7					13.009					60													<u> </u>	
TA1-LY-24-C	8/20/12 8:40	28.0			6.5				56.9										82													<u> </u>	
TA1-LY-24-S	8/20/12 9:15	28.9			2 6.1				24 41.4										66													<u> </u>	
TA1-LY-42-S	8/20/12 9:25	29.	_	1	1 5.9				10 51.8			0.009			0.028				69													<u> </u>	
TA2-LY-12-S	8/20/12 11:20	30.0			6.5				41.6										67													<u> </u>	1
TA2-LY-24-C	8/20/12 11:10	30.7			5.5				45.9	3.9								4	69	_					<u> </u>					\perp		<u> </u>	
	8/20/12 11:30	32.3		3	2 4.6				35 54.2						0.36				78													<u> </u>	1
TA2-LY-42-S	8/20/12 11:40	31.3		1	1 5.9				38 39.2			0.009		37.009	0.12		1	6 0.067		1	3	0.01	70	0.15	5 4	5 <mark>0.08</mark>	<mark>55</mark> 1	15 <mark>0.</mark>	<mark>01</mark> 1	1 8	В	<u> </u>	1
TA3-LY-12-S	8/20/12 10:00	28.9	_	11	0 7.0				17 2.5		0.984	1 0.016			1.8				61														
TA3-LY-12-S DUP	8/20/12 10:05	28.9		12					15 2.42	0.92	0.904	1 0.016	1.5	1.516	1.8				62														
TA3-LY-24-C	8/20/12 9:50	29.			5.9				34		1.976	0.024	32						59														
TA3-LY-24-S	8/20/12 10:15	29.4	4 6.3	2	2 6.2	549			38 15.97	0.97	0.95	0.019	15	15.019	0.24		1	8 0.14	4 63	15	5	0.11	55	0.15	2	7 0.04	<mark>19</mark> 1	12 0.0	<mark>02</mark> 2.	3 5	4		
TA3-LY-42-S	8/20/12 10:30	30.1			7.4				11.5	1.9	1.85	0.043	9.6	9.643					61														
TA4-LY-12-S	8/20/12 12:10	35.2	_		6.4				22 35		0.98		34		6.3		1	1 0.38	8 72	2 23	3	5.7	54	0.14	1 4	5 0.0		14 0.0					
TA4-LY-12-S DUP	8/20/12 12:15	35.2			6.4				24 31. ⁻	1.1	1.07		30	30.025	6.3		1	1 0.4	4 72	2 23	3	6	55	0.14	1 4	4 0.0)2 1	0.0	01 5.	3 5	6		
TA4-LY-24-C	8/20/12 12:00	32.3		6	5 4.6				38 30.2					28.009	0.22				71	l l													
TA4-LY-24-S	8/20/12 12:40	33.5			5.5	724			48.5	3.5	3.4			45.05					61														
TA4-LY-42-S	8/20/12 12:50	30.7			5.5				38.2	3.2	3.19 ⁻	0.009	35	35.009					89	9													
LY01-BKG-24	8/22/12 8:30	26.3	6.3		6.6	236	i		1.83	1.8	1.76	0.033	0.03	0.063					6.3	3													
LY02-BKG-42	8/22/12 8:40	26.4			6.6								0.01																				
TA1-PAN-12-N	8/24/12 11:35	29.0				686			37.6					32.21					68	3													
TA2-PAN-12-N	8/24/12 11:15	32.9	9 6.8		5.5	430			23.2	6.2	5.23	0.97	17	17.97					65	5													
TA3-PAN-12-N	8/24/12 11:25	29.1			4.0				16.3					10.25					29														
TA4-PAN-12-N	8/24/12 10:25	27.7	7 6.5		4.0	331			11.7	5.7	5.3	0.39	6	6.39					25	5													
Groundwater samples																																	
TA1-PZ-09-I7	8/20/12 8:56	27.0	_		0.8				7.8				6	6.026					13														
TA1-PZ-09-M9	8/20/12 9:38	27.1			0.8				6.7				5.6	5.621					13						<u> </u>								
TA1-PZ-09-N3	8/20/12 11:13	28.2			1.1				20.	3.1				17.06					30	_													
TA1-PZ-09-07	8/20/12 10:22		5.4		2 0.7				33 11.8				9.7						21														
TA1-PZ-09-RS16	8/21/12 7:36	25.8			0.5				10			0.13	5.6						7.2														
	8/21/12 8:14		5.5		0.3				13.1	2.1			11						20)													
TA1-PZ-11-EF2	8/20/12 8:15	27.0			2 0.8				10 12		0.99	0.009	11		0.067		1	2 0.054				0.01		0.05		3 0.0		.5 0.0			~		
TA1-PZ-11-EF2 DUP	8/20/12 8:20	27.0			2 0.8				10 12.99	0.99	0.98	0.009			0.071	2	5	2 0.071	1 23	9.9	9	0.01	52	0.05	5 2:	2 0.0	02 5.	.3 0.0	21	9 1	5		
TA1-PZ-11-J4	8/20/12 12:25	27.9	_		2 0.4				10 8.9	1.5	1.49 ⁻								16	3													
TA1-PZ-11-K4	8/20/12 12:41	27.4			2 0.4				10 8.6				6.8		0.06				14	1													
TA1-PZ-11-L2	8/20/12 11:48	27.7	7 4.2		2 0.5	782			10 94.8	3.8	3.789	0.011	91	91.011	0.26	4	.2 2.	8 0.047	7 95	40)	0.01	41	0.082	40	6 0.03	<mark>36</mark> 2	21 0.	02 5.	2 5	6		
TA1-PZ-11-L3	8/20/12 12:07	27.7	7 4.5	2.	<mark>1</mark> 0.5	332			10 14.6	1.6	1.59 ⁻	0.009	13	13.009	0.1				27	7													
TA1-PZ-11-L4	8/23/12 10:40		4.5		2 2.3	255			10 9.2	1.3	1.29	0.009	7.9	7.909	0.026				14	1													
TA1-PZ-11-L4 DUP	8/23/12 10:45		4.5		2 2.3	255			10 8.9	1.2	1.19 ⁻	0.009	7.7	7.709	0.014				14	1													
	8/20/12 12:58	27.5	5 4.4		2 0.3	275			10 11.3	1.3	1.29	0.009	10	10.009	0.045				15	5													

Table G.1 (continued) Water Quality Analytical Results (August 20 through August 27, 2012)

Sample ID	ample Date/Tim	Tem (°C)		Tot Alkal (mg	inity	DO (mg/L)	Specific Conductance (µS)	TSS (mg/L)	CBOD₅ (mg/L)	COD (mg/L)	TN (mg/L N) ¹	TKN (mg/L N)	Organic N (mg/L N) ²	NH ₃ -N (mg/L N	NOx (mg/L N)	TIN (mg/L N) ³	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)		ļ	Anions					ı	Cation	S		Hydrogen Sulfide (Unionized	Sulfide	Sucrato (ug/L)
																					F.	CI NO ₃	-N ⁻ NO ₂ -N ⁻	PO₄-P⁻	SO₄⁻	В	Ca	Fe	Mg	Mn	K	Na		1
TA1-PZ-16-I7	8/20/12 9:11	26	.4 5.)		0.9	291	1			13.5	1.5	1.491	0.009	12	12.009						15												1
TA1-PZ-16-M9	8/20/12 9:54	26	.4 4.	9		0.8	298	3			12.6	1.6	1.591	0.009	11	11.009						16												1
TA1-PZ-16-N3	8/20/12 11:30	26	.4 5.)		0.5	280)			10	1.7	1.684	0.016	8.3	8.316						15												1
TA1-PZ-16-07	8/20/12 10:43	26	.5 5.)	6.3	0.2	302	2		13	10.8	1.2	1.188	0.012	9.6	9.612	1.9				i i	14												1
TA1-PZ-16-RS16	8/21/12 7:56	25	.6 5.	1		0.4	296	3			10.8	2.4	2.377	0.023	8.4	8.423					i i	14												1
TA1-PZ-16-RS18	8/21/12 8:32	26	.0 5.	1		0.3	275	5			7.5	1.4	1.376	0.024	6.1	6.124						11												
TA2-PZ-09-17	8/21/12 12:04	27	_	2		0.3	274				8.4	2	1.991	0.009	6.4							15												†
TA2-PZ-09-L8	8/21/12 12:42	27				0.6	419	_			10.3	2.9	2.843									19												+
TA2-PZ-09-M4	8/21/12 8:53	26	_			0.7	509				26.8	7.8	7.776									6.9												+
TA2-PZ-09-N7	8/21/12 13:20	27				0.3	253	_		1	23.4	6.4	6.383		7 17		+					36				-								+
	8/22/12 7:27	26	_			1.1	186				7	1.3	1.283									3.8												+
TA2-PZ-09-TU19		26	_	_	-+	0.4	170	_		 	4.96	0.76	0.722		3 4.2						+	3.6		 		-							 	+
TA2-PZ-09-TU21	8/22/12 8:09	27	_		2	0.4	315	_		10	12.3	1.3	1.291								1	20		 		-							 	+
TA2-PZ-10-H5	8/21/12 11:40	27			2	0.4	315			10	11.3	1.3	1.29								1	19		-									-	+
TA2-PZ-10-H5 DUP	8/21/12 11:45		_		2	0.4				. 0								<u> </u>			+			 									 	+
TA2-PZ-10-J5	8/21/12 11:21	27	_		2		512			17	22.1	2.1	2.085		_		_					52 48		 									1	+
TA2-PZ-10-K5	8/21/12 11:02	27			2	0.4	523			20	20.5	1.5	1.486				0.05																	
TA2-PZ-10-L2	8/21/12 9:30	26			2	0.4	289	_		10		1.5	1.489				0.13					14												
TA2-PZ-10-L3	8/21/12 9:43	26			2	0.4	283			10	7.4	1.7	1.69		5.7							13												
TA2-PZ-10-L4	8/21/12 10:01	27			2	0.2	548	_		10	21.4	2.4	2.391						2.7	2.3	0.08		21	0.01	64	0.11	35	0.035	10	0.041	11	35		
TA2-PZ-10-L5	8/21/12 10:19	27			2	0.8	504			10	21.3	1.3	1.275				_					46												
TA2-PZ-10-L6	8/21/12 10:38	27			2	0.7	461	_		10		0.97	0.959				0.1					41												<u> </u>
TA2-PZ-10-L6 DUP	8/21/12 10:43	27			2	0.7	461	_		10	20.1	1.1	1.087				0.095					42												<u> </u>
TA2-PZ-16-I7	8/21/12 12:23	26				0.2	214				4.47	0.97	0.961									7.2												
TA2-PZ-16-L8	8/21/12 13:01	27		3		0.2	223				4.7	1.1	1.091									7.1												
TA2-PZ-16-M4	8/21/12 9:11	26	.2 5.	4		0.4	228	3			2.31	0.61	0.588	0.022	2 1.7	1.722	!					5.9												<u> </u>
TA2-PZ-16-N7	8/21/12 13:33	26	.7 5.	1		0.6	211	1			3.8	0.8	0.717	0.083	3	3.083						6.8												
TA2-PZ-16-TU19	8/22/12 7:46	25	.7 5.	2		0.5	206	6			5.88	0.68	0.62	0.06	5.2	5.26						6.5												
TA2-PZ-16-TU21	8/22/12 8:23	25	.9 5.)		0.6	192	2			4.26	0.96	0.949	0.011	3.3	3.311						5.6												
TA3-PZ-09-17	8/23/12 7:34	26	.6 7.)		3.3	882	2			10	2.1	2.088	0.012	7.9	7.912	!					14												
TA3-PZ-09-M9	8/23/12 16:28	27	.4 6.	4		1.0	456	6			10.9	2.7	2.683	0.017	8.2	8.217	i					15												
TA3-PZ-09-N3	8/23/12 15:13	27	.5 6.	1		0.7	535	5			9.5	2	1.93	0.07	7 7.5	7.57						18												1
TA3-PZ-09-07	8/24/12 7:36	26	.7 6.	3		0.9	488	3			10.5	2.3	2.221	0.079	8.2	8.279						16												
TA3-PZ-09-ST14	8/24/12 8:19	26	.9 4.	3		0.5	218	3			6.4	1.4	1.391	0.009	5	5.009						4.9												
TA3-PZ-09-ST16	8/24/12 8:52	27	.1 5.	7		1.5	313	3			7.2	1.5	1.489	0.011	5.7	5.711						5.7												1
TA3-PZ-10-J5	8/23/12 10:20	26	.9 4.	3	2	2.1	308	3		10	8.2	1.2	1.191	0.009	7	7.009	0.028					15												1
TA3-PZ-10-J5 DUP	8/23/12 10:25	26	.9 4.	3	2	2.1	308	3		10	8.8	1.1	1.091	0.009	7.7	7.709	0.021					17												
TA3-PZ-10-K5	8/23/12 10:56		.0 4.		2	1.9	324			11	9.9	1.4					0.016					0.05												
TA3-PZ-10-L5	8/23/12 9:57	27			2	1.5				20	12.6	1.6	1.591									22												
TA3-PZ-11-EF2	8/23/12 8:48	27			2	5.0				10		1.2					0.024		0.78	0.55	0.023	12 9	9.9	0.01	48	0.05	24	0.02	6.5	0.073	9.5	8.7		T
TA3-PZ-11-I2	8/23/12 9:10		.4 4.		2	3.1	373			10	15.1	1.1					0.021			0.87			14	0.01		0.05		0.02		0.081		19		4
TA3-PZ-11-I2	8/23/12 15:46	27			2	1.1				10	15.4	1.4	1.391				0.063		1.5				13	0.01		0.05		0.022		0.066		23		+
TA3-PZ-11-L3	8/23/12 16:05	27	_		2	1.3				10		1.3	1.291							<u> </u>	 ••••	24									<u> </u>	-	1	+
TA3-PZ-11-L3	8/23/12 9:36		.2 4.		2	2.3	356			17	12.1	1.1	1.091				0.055				1	23											<u> </u>	_
TA3-PZ-11-L4 TA3-PZ-16-I7	8/23/12 7:53	25	_		-	0.4	294				7.1	1.9	1.891				_				+	8.9		+ +		-							 	+
TA3-PZ-16-17 TA3-PZ-16-M9	8/23/12 7:53	26		_	-+	0.4				 	7.1	1.4				6.009					+	9.9		 		-							 	+
			.0 5.			0.3	309				12.4	1.4										17		 		+								+
TA3-PZ-16-N3	8/23/12 15:33									1		1.4									+	13		-		-+							-	+
TA3-PZ-16-07	8/24/12 7:55	25	.8 5.	1		0.5	291	'			9.1	1	0.991	0.008	8.1	8.109	<u>'</u>	<u> </u>			1	13											<u> </u>	

Table G.1 (continued) Water Quality Analytical Results (August 20 through August 27, 2012)

Sample ID	ample Date/Tim	Temp (°C)	рН	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (μS)	CBOD ₍		TN (mg/L N) ¹	TKN (mg/L N)	Organic N (mg/L N) ²	NH ₃ -N (mg/L N)	NOx (mg/L N	TIN (mg/L N) ³	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L))		Anio	ons					Cation	ns		Hydrogen Sulfide (Unionized	Sulfide	Sucralos (ug/L)
																			F.	CI.	NO ₃ -N ⁻ I	NO ₂ -N	PO₄-P	SO₄⁻ B	Ca	Fe	Mg	Mn	K	Na ,		1
TA3-PZ-16-ST14	8/24/12 8:32	25.9	5.1		0.4	273			7.8	1.2	1.191	0.009	6.	6.609						9.2												
TA3-PZ-16-ST16	8/24/12 9:16	25.9	5.2		0.4	262			6.49	0.69	0.681	0.009	5.	5.809						8.1												
TA4-PZ-09-17	8/22/12 11:20	27.7	5.3		1.1	326			10.4	3.4	3.22	0.18	3	7 7.18						14											6.8	8
TA4-PZ-09-L8	8/22/12 11:58	27.6	6.2		1.8	363			10.4	2.3	2.248	0.052	8.	1 8.152						12											5.2	2
TA4-PZ-09-M4	8/22/12 8:53	26.7	6.6	i	0.6	552			13.5	1.5	1.489	0.011	1	2 12.011						26												1
TA4-PZ-09-N7	8/22/12 12:35	27.4	5.6	;	1.3	317			12.4	4.1	3.96	0.14	8.	3 8.44						16											2.2	2
TA4-PZ-09-TU14	8/22/12 13:51	27.6	4.7	·	0.7	159			4.6	1.2	1.118	0.082	3.	4 3.482						4.2											0.9	1
TA4-PZ-09-TU16	8/22/12 13:13	27.5	5.0		0.8	271			9.1	4.1	4.01	0.09		5 5.09						4											0.	1
TA4-PZ-10-H5	8/22/12 10:56	27.2		2	1.4	235		11	10.4	2.5	2.491	0.009	7.	9 7.909	0.052					9.7											1.3	7
TA4-PZ-10-J5	8/22/12 10:44	27.2	4.3	2	2.1	382		10	13.1	2.1	2.091	0.009	1							23											0.9	1
TA4-PZ-10-K5	8/22/12 10:29	27.1	4.2	2	1.7	389		10	17.6	1.6	1.591	0.009		_	0.16		1.8	1.2	0.18	3 36	15		0.01	56 0.079	3	1 0.03	9 7.	5 0.03	3 5.1	22	2	
TA4-PZ-11-EF2	8/22/12 14:25	27.8	4.2	2	1.5			11	6.6	1.1	1.091	0.009	_					†	1	6.8					Ť			+			0.	1
TA4-PZ-11-L/2	8/23/12 16:15	29.1		2	2.3			10	11.6	1.6	1.591	0.009					2.1	1.7	7 0.14	1 14	9.4		0.01	60 0.0	5 2	9 0.0	2 5.	6 0.08	3 6.2	9.3		0.5
TA4-PZ-11-L3	8/22/12 9:32	26.8	1		1.1	249		17	8.7	1.2	1.191	0.009			0.032		†	<u> </u>	 	18					 	2.0	-	+	T			+
TA4-PZ-11-L4	8/22/12 9:46	26.8	4.2	2	1.6			10	14.8	1.8	1.791	0.009			0.024		0.95	0.85	0.15	5 31	12		0.01	52 0.07	7 2	7 0.02	1 6.	6 0.04	3 5.3	20		+
TA4-PZ-11-L5	8/22/12 10:04	26.9		2	1.5			11	19.6	1.6	1.591	0.009		_	0.075					36					_				-			+
TA4-PZ-11-L6	8/22/12 10:16	27.1	4.3	2	1.7	368		10	16.6	1.6	1.591	0.009			0.073					35												+
TA4-PZ-11-L0 TA4-PZ-16-I7	8/22/12 11:39	26.2	5.1	_	0.6				5.37	0.97	0.945		4.		0.0.0					7.6												+
TA4-PZ-16-L8	8/22/12 12:17	26.4			0.7				7.1	1.7	1.632		5.							8.3												+
TA4-PZ-16-M4	8/22/12 9:12	25.8			0.3	232			8.6	2.1	2.091	0.009								9.9												+
TA4-PZ-16-N7	8/22/12 12:54	26.2		!	0.4	252			9.6	1.2	1.183	0.017								12												+
TA4-PZ-16-TU14	8/22/12 14:10	26.5			0.3				2.11	0.61	0.586									4.6												+
TA4-PZ-16-TU16	8/22/12 13:32	26.3			0.3	237			3.17	0.67	0.645		2.	-						5.1												+
PZ01-BKG-09	8/24/12 11:48	28.5			4.3				0.37	0.35	0.341	0.009						1		4.4					+			+	1			+
PZ04-BKG-09	8/24/12 11:48	27.6			4.5				12.5	2.5	2.485									6								+				+
PZ04-BKG-09 DUP	8/24/12 8:35	27.6	1		4.5				12.4	2.4	2.388									6.2								+				+
PZ24-BKG-26	8/24/12 9:30	25.8		4.2				10	13.9	1.9	1.89				0.67			1		17					+			+	1			+
PZ24-BKG-26 DUP	8/24/12 9:35	25.8		4.2				10	15.1	2.1	2.088				0.67					17			-		1			+				+
PZ-29-BKG09	8/23/12 11:35	29.8		3.2		.		10	4.56	0.96	0.951	0.009			0.12					7.7			-		1			+				0.0
PZ-29-BKG09 PZ-30-BKG-16	8/23/12 11:35	26.7						10	12.85	0.85	0.84				0.07					17												0.0
PZ-30-BKG-16 PZ-31-BKG-26	8/23/12 13:30	26.7						10	14.4	1.4	1.21				0.12					19												0.0
	8/23/12 13:35	26.7						10	11.3	1.3	1.12				0.12					19												- 0.0
PZ-31-BKG-26 DUP PZ32-BKG09	8/23/12 13:35	28.6		0.0	2.2			10	6.9	1.4	1.384				0.035	1			1	5.5								1	1			0.0
	- + ' · ·	27.4		4.2				10	12.1	1.4	1.01	0.01			0.032				1	15								+				0.0
PZ33-BKG-16	8/23/12 15:00 8/23/12 15:00	26.4		6.3		.		10	10.1	1.1	1.01			_	0.032		1		1	20								+				0.0
PZ34-BKG-26	8/23/12 15:00 8/24/12 9:52	26.8						10	7.4	1.4	1.756		_		0.42				1	10					+			+				0.0
PZ35-BKG09	- + ' · ·	26.1		5.2					8.21	0.91	0.85			_	1		1	1	1	01					1			+	-			+
PZ36-BKG-16	8/24/12 10:06	25.4		4.2		302		10	14.1	1.1	1.081		 		1.7		1	1	1	16					1			+	-			+
PZ37-BKG-26	8/24/12 10:28	26.6		22		246		10	1.5	0.51	0.487	0.018	0.9		1./		-		1	6.2					-	-	-	+	-			+
PZ38-BKG09	8/24/12 10:29	25.9		32		237		-	4.4	1.1	1.083		3.	_				 	1	6.5						-		+	-			+
PZ39-BKG-16	8/24/12 11:04														-				1						+	-		+	-			+
PZ40-BKG-26	8/24/12 11:26	25.0	5.2	4.2	0.3	296			10.7	1.1	1.075	0.025	9.	9.625						15									1			

o:\44237-001\\Wpdocs\Report\Draft

Table G.1 (continued) Water Quality Analytical Results (August 20 through August 27, 2012)

Sample ID	ample Date/Tim	Temp (°C)	рН	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)		BOD₅ mg/L)	COD (mg/L)	TN (mg/L N) ¹	TKN (mg/L N)	Organio N (mg/L N) ²	NH ₃ -N	NOx (mg/L N	TIN (mg/L N)	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)		An	ions						Cation	s		S	drogen ulfide ionized)	Sulfide	Sucralos (ug/L)
																				F ⁻	CI.	NO ₃ -N	NO ₂ -N	l PO₄-P	SO ₄	В	Ca	Fe	Mg	Mn	K	Na			
PNRS II samples																																			
TA5-Denite Tank	8/24/12 10:50	28.4	7.0	230	0.1	909	4	2	120	2.51	2.5	2.4	0.0	0.0	0.06	3.5	200)															3.3		
TA5-Denite Tank DUP	8/24/12 10:55	28.4	7.0	220	0.1	909	6	2	110	2.41	2.4	2.348	0.052	0.0	0.062	3.7	260)															2.5		
TA5-LINER-SP	8/24/12 11:45	33.2	6.6		3.3	786			150	5.8	4.2	4.0	0.1	5 1.6	1.75	6.1																			
TA5-LINER-SP	8/27/12 8:45	27.0	6.4	240	2.7	810	6	2	120	11.6	5.7	5.33	0.37	5.9	6.27	1					49)			35								0.7		
TA5-LY-C	8/20/12 13:30	35.3	6.4	75	5.9	653		2	76	26.2	3.2	3.19 ⁻	0.009	2	23.009	4.1	1				58	3			50								1.8		
TA5-PZ-I	8/23/12 8:43	26.7	4.7	2.1	1.1	312	1	2	11	7.10	1.8	1.79	0.009	5.3	5.3	0.033	1																0.01		5.1
TA6-Denite Tank	8/24/12 10:00	28.0	6.8	170	0.7	853	2	2	120	4.05	4	3.86	0.14	0.0	0.19	5.9	180)			58	3			120								1	1.7	
TA6-LINER-SP	8/27/12 8:30	27.0	6.4	230	3.0	719	2	2	130	9.1	6.3	5.73	0.57	7 2.8	3.37	3.6	1				49)			35								0.7		
TA6-LY-C	8/20/12 13:10	32.3	6.2	110	5.3	529		2	85	4.6	1.9	1.89	0.009	2.7	2.709	1.9	1				53	3			40								18	21	
TA6-PZ-I	8/23/12 9:20	26.9	5.4	9.4	2	374	2	2	29	21.7	1.7	1.69	0.009) 20	20.009	0.032	1				20)											0.01		0.0
Blanks																																			
EB	8/20/12 7:30	24.5	6.8	2	3.7	2			10	0.06	0.05	0.04	0.009	0.0	0.019			0.5	0.	5 0.01	0.05	0.01	1	0.01	0.2	0.05	0.042	0.02	0.02	0.00	0.01	0.13			
FB-DI	8/20/12 7:35	24.5	6.8	2	3.7	2				0.06	0.05	0.04	0.009	0.0	0.019						0.057	7													
FB-Tap	8/20/12 7:45	27.6	6.3	120	2.9	5				0.08	0.05	0.04	0.009	0.03	0.039						22	2													

Notes:

Gray-shaded data points indicate values below method detection level (mdl), mdl value used for statistical analyses.

Yellow-shaded data points indicate the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit, value used for statistical analysis.

 $^{^{1}}$ Total Nitrogen (TN) is a calculated value equal to the sum of TKN and NO $_{\chi}$.

²Organic Nitrogen (ON) is a calculated value equal to the difference of TKN and NH₃

³Total Inorganic Nitrogen (TIN) is a calculated value equal to the sum of NH₃ and NO_x.

D.O. - Dissolved oxygen

G - Grab sample





Appendix H: Statistical Water Quality Summary

Table H.1 Statistical Water Quality Summary

File and the samples FINE PUMP Tank 1 STE PUMP Tank 5 ATU Clarifier 5 ATU Eff Pump Tank 5 ATU Eff Pump Tank 5 ATU Eff Pump Tank 5 ME ATU STD. 6 ME A	n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX TD. DEV. MIN MAX TD. DEV.	2 27.6 0.8 27.0 28.2 2 28.6 0.1 28.5 28.7 1 27.8	2 6.9 7.0 2	Total Alkalinity (mg/L) 2 330.0 42.4 300.0 360.0 2 365.0 7.1 360.0 370.0	2 0.3 0.0 0.3 0.3 2 0.3 0.2 0.2 0.2 0.4 1 0.2	Specific Conductance (μS) 2 1108.0 79.2 1052.0 1164.0 2 1122.0 63.6 1077.0 1167.0 1 870.0	2 46.0 17.0 34.0	2 150.0 155.6 40.0 260.0 2 56.5 51.6 20.0 93.0	COD (mg/L)	TN (mg/L N) ¹ 2 67.5 5.0 64.0 71.1 2 63.0 2.8 61.0 65.0	2 67.5 4.9 64.0 71.0 2 63.0 2.8 61.0	2 22.0 7.1 17.0 27.0 2 8.5 2.1		NOx (mg/L N) 2 0.0 0.0 0.0 0.1 2 0.0	2 45.5 12.0 37.0 54.1 2 54.5	2 10.3 6.7 5.5 15.0	Fecal (Ct/100 mL) 2 42,000 92,000	TOC (mg/L)	DOC (mg/L)	F ⁻	2 95.5 6.4 91.0	NO ₃ -N	NO ₂ -N ⁻ PO ₄	-P SO ₄	В	Са	Fe	Mg	Mn	K	Na	Hydrogen Sulfide (Unionized	700 700 700	1 0.0 0.0 0.0	1 27.0 27.0 27.0
### STE Pump Tank ATU Clarifier ATU Eff Pump Tank ATU Eff Pump Tank ATU Eff Pump Tank	n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV.	2 27.6 0.8 27.0 28.2 2 28.6 0.1 28.5 28.7 1 27.8 27.8 27.8 2	2 6.9 7.0 2 7.1 7.6 1	2 330.0 42.4 300.0 360.0 2 365.0 7.1 360.0	2 0.3 0.0 0.3 0.3 2 0.3 0.2 0.2 0.4 1	2 1108.0 79.2 1052.0 1164.0 2 1122.0 63.6 1077.0 1167.0	2 46.0 17.0 34.0 58.0 2 19.5 6.4 15.0 24.0	2 150.0 155.6 40.0 260.0 2 56.5 51.6 20.0 93.0	(g)	2 67.5 5.0 64.0 71.1 2 63.0 2.8 61.0	2 67.5 4.9 64.0 71.0 2 63.0 2.8 61.0	2 22.0 7.1 17.0 27.0 2 8.5 2.1	2 45.5 12.0 37.0 54.0 2 54.5	2 0.0 0.0 0.0 0.1 2	2 45.5 12.0 37.0 54.1	2 10.3 6.7 5.5 15.0	2 42,000	(9, 2)	(g, -)		2 95.5 6.4 91.0	NO ₃ -N	NO ₂ -N ⁻ PO ₄	-P SO ₄	В	Ca	Fe	Mg		K	Na	(Unionized	700	1 0.0 0.0 0.0 0.0	1 27.0 27.0
ME STD. ME	MEAN TD. DEV. MIN MAX	27.6 0.8 27.0 28.2 2 28.6 0.1 28.5 28.7 1 27.8 27.8 27.8 2	6.9 7.0 2 7.1 7.6 1	330.0 42.4 300.0 360.0 2 365.0 7.1 360.0	0.3 0.0 0.3 0.3 2 0.3 0.2 0.2 0.4 1 0.2	1108.0 79.2 1052.0 1164.0 2 1122.0 63.6 1077.0 1167.0	46.0 17.0 34.0 58.0 2 19.5 6.4 15.0 24.0	150.0 155.6 40.0 260.0 2 56.5 51.6 20.0 93.0		67.5 5.0 64.0 71.1 2 63.0 2.8 61.0	67.5 4.9 64.0 71.0 2 63.0 2.8 61.0	22.0 7.1 17.0 27.0 2 8.5 2.1	45.5 12.0 37.0 54.0 2 54.5	0.0 0.0 0.0 0.1 2	45.5 12.0 37.0 54.1 2	10.3 6.7 5.5 15.0	42,000				95.5 6.4 91.0									1			700 700	0.0 0.0	27.0
ME STD. ME	MEAN TD. DEV. MIN MAX	27.6 0.8 27.0 28.2 2 28.6 0.1 28.5 28.7 1 27.8 27.8 27.8 2	6.9 7.0 2 7.1 7.6 1	330.0 42.4 300.0 360.0 2 365.0 7.1 360.0	0.3 0.0 0.3 0.3 2 0.3 0.2 0.2 0.4 1 0.2	1108.0 79.2 1052.0 1164.0 2 1122.0 63.6 1077.0 1167.0	46.0 17.0 34.0 58.0 2 19.5 6.4 15.0 24.0	150.0 155.6 40.0 260.0 2 56.5 51.6 20.0 93.0		67.5 5.0 64.0 71.1 2 63.0 2.8 61.0	67.5 4.9 64.0 71.0 2 63.0 2.8 61.0	22.0 7.1 17.0 27.0 2 8.5 2.1	45.5 12.0 37.0 54.0 2 54.5	0.0 0.0 0.0 0.1 2	45.5 12.0 37.0 54.1 2	10.3 6.7 5.5 15.0	42,000				95.5 6.4 91.0									1			700 700	0.0 0.0	27.0
STD. MM ME STD. ME STD. MM MM ME STD. ME STD. ME STD. MM MM MM MM ATU Eff Pump Tank STD. MM MM STD. MM MM STD. MM MM SOIl moisture samples	MIN MAX NO MEAN MEAN NO MEAN N	0.8 27.0 28.2 2 28.6 0.1 28.5 28.7 1 27.8 27.8 27.8 2 28.7 27.8	7.0 2 7.1 7.6 1	42.4 300.0 360.0 2 365.0 7.1 360.0	0.0 0.3 0.3 2 0.3 0.2 0.2 0.4 1	79.2 1052.0 1164.0 2 1122.0 63.6 1077.0 1167.0	17.0 34.0 58.0 2 19.5 6.4 15.0 24.0	155.6 40.0 260.0 2 56.5 51.6 20.0 93.0 1		5.0 64.0 71.1 2 63.0 2.8 61.0	4.9 64.0 71.0 2 63.0 2.8 61.0	7.1 17.0 27.0 2 8.5 2.1	12.0 37.0 54.0 2 54.5	0.0 0.0 0.1 2	12.0 37.0 54.1 2	6.7 5.5 15.0					6.4 91.0								1	1			700 700	0.0 0.0	27.0
M M M M M M M M M M	MIN MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n MIN MAX n MIN MAX n	27.0 28.2 2 28.6 0.1 28.5 28.7 1 27.8 27.8 27.8 2 27.8	7.0 2 7.1 7.6 1	300.0 360.0 2 365.0 7.1 360.0	0.3 0.3 2 0.3 0.2 0.2 0.4 1 0.2	1052.0 1164.0 2 1122.0 63.6 1077.0 1167.0	34.0 58.0 2 19.5 6.4 15.0 24.0	40.0 260.0 2 56.5 51.6 20.0 93.0		64.0 71.1 2 63.0 2.8 61.0	64.0 71.0 2 63.0 2.8 61.0	17.0 27.0 2 8.5 2.1	37.0 54.0 2 54.5	0.0 0.1 2	37.0 54.1 2	5.5 15.0					91.0								1	1			70	0.0	
STE Pump Tank STD. ME STD. ME ATU Clarifier STD. ME ATU Eff Pump Tank ATU Eff Pump Tank STD. ME ME STD. ME ME STD. ME ME STD.	MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n	28.2 2 28.6 0.1 28.5 28.7 1 27.8 27.8 27.8 2	7.0 2 7.1 7.6 1	360.0 2 365.0 7.1 360.0	0.3 2 0.3 0.2 0.2 0.4 1 0.2	1164.0 2 1122.0 63.6 1077.0 1167.0	58.0 2 19.5 6.4 15.0 24.0	260.0 2 56.5 51.6 20.0 93.0		71.1 2 63.0 2.8 61.0	71.0 2 63.0 2.8 61.0	27.0 2 8.5 2.1	54.0 2 54.5	0.1	54.1	15.0								+					4	1			70	0.0	
ME STD. ME	n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX TO DEV. MIN MAX n MAX n MAX n MAX	2 28.6 0.1 28.5 28.7 1 27.8 27.8 27.8 2	7.1 7.6 1	2 365.0 7.1 360.0	2 0.3 0.2 0.2 0.4 1 0.2	2 1122.0 63.6 1077.0 1167.0	2 19.5 6.4 15.0 24.0	2 56.5 51.6 20.0 93.0		2 63.0 2.8 61.0	2 63.0 2.8 61.0	2 8.5 2.1	2 54.5	2	2		32,000				100.0								4	1			1	1	27.0
ATU Eff Pump Tank ATU Eff Pump Tank ATU Eff Pump Tank ATU Eff Pump Tank STD. ME ME ATU Eff Pump Tank ME STD. ME ME STD. ME ME STD.	MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN	28.6 0.1 28.5 28.7 1 27.8 27.8 27.8 2	7.6	365.0 7.1 360.0	0.3 0.2 0.2 0.4 1 0.2	1122.0 63.6 1077.0 1167.0	19.5 6.4 15.0 24.0	56.5 51.6 20.0 93.0		63.0 2.8 61.0	63.0 2.8 61.0	8.5 2.1	54.5				_			_															
STE Pump Tank STD. M M ME ME ATU Clarifier STD. M M ATU Eff Pump Tank STD. M M STD. M M M SOIl moisture samples	MIN MAX n MEAN MAX n MEAN MAX n MEAN MAX n MEAN MEAN MEAN MEAN MEAN MEAN MEAN MEAN	0.1 28.5 28.7 1 27.8 27.8 27.8	7.6	7.1 360.0	0.2 0.2 0.4 1 0.2	63.6 1077.0 1167.0	6.4 15.0 24.0	51.6 20.0 93.0 1		2.8 61.0	2.8 61.0	2.1		0.0		2	2			1	2	1	1	2	1	1	1	1	1	24.0	1				-
ATU Clarifier	MIN MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN	28.5 28.7 1 27.8 27.8 27.8 27.8	7.6	360.0	0.2 0.4 1 0.2	1077.0 1167.0 1	15.0 24.0 1	20.0 93.0 1		61.0	61.0			0.0		9.6				3.7	83.0	0.0	4.:	32.5 29.0	0.1	56.0	0.3	18.0	0.1	34.0	60.0		60).0	
ATU Clarifier STD. ME ATU Eff Pump Tank STD. ME ME STD. MM ME STD. MM M Soil moisture samples	MAX n MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN MIN MEAN TD. DEV. MIN	28.7 1 27.8 27.8 27.8 27.8	7.6		0.4 1 0.2	1167.0 1	24.0	93.0				70	54.0	0.0	0.7 54.0	6.2 5.2	84,000			3.7	15.6 72.0	0.0	4.:		0.1	56.0	0.3	18.0	0.1	34.0	60.0		60	0.0	
ATU Clarifier ATU Clarifier ME ATU Eff Pump Tank TM ME STD. M M Soil moisture samples	n MEAN TO. DEV. MIN MAX n MEAN TO. DEV. MIN	1 27.8 27.8 27.8 2	7.7	370.0	0.2	1	1	1		05.0	65.0	7.0 10.0	55.0	0.0	55.0	14.0	184,000			3.7	94.0	0.0	4.:			56.0	0.3	18.0	0.1	34.0	60.0		60		
ATU Clarifier ATU Clarifier ME ATU Eff Pump Tank ATU Eff Pump Tank ME STD. M M Soil moisture samples	MEAN TD. DEV. MIN MAX n MEAN TD. DEV. MIN	27.8 27.8 27.8 2	7.7		0.2					1	1	10.0	1	1	1	14.0	104,000			3.7	1	0.0	4	33.0	0.1	30.0	0.3	16.0	0.1	34.0	00.0		000).0	
ATU Clarifier STD. M M ATU Eff Pump Tank STD. ME STD. M STD. M STD. M STD. M STD.	MIN MAX n MEAN STD. DEV. MIN	27.8 27.8 2	_			670.0	11.0	8.0		35.0	23.0	12.0	11.0	12.0	23.0						72.0													+	
ATU Eff Pump Tank ATU moisture samples	MIN MAX n MEAN TD. DEV. MIN	27.8	_				1 T	0.0		33.0	25.0	12.0	11.0	12.0	25.0						72.0													+	
ATU Eff Pump Tank ATU Eff Pump Tank M M Soil moisture samples	MAX n MEAN TD. DEV. MIN	27.8	7.7		0.2	870.0	11.0	8.0		35.0	23.0	12.0	11.0	12.0	23.0						72.0													\top	
ATU Eff Pump Tank STD. M M Soil moisture samples	n MEAN STD. DEV. MIN	2			0.2	870.0	11.0	8.0		35.0	23.0	12.0	11.0	12.0	23.0						72.0				1									\top	
ATU Eff Pump Tank M Soil moisture samples	MIN	27.8	2	2	2	2	2	2		2	2	2	2	2	2	2	2			1	2	1	1	1	1	1	1	1	1	1	1		1		
M Soil moisture samples	MIN	27.0		275.0	0.4	1023.0	4.5	20.5		48.1	42.5	4.5	38.0	5.6	43.6	9.9				0.3	83.5	1.6	5.1	49.0	0.1	52.0	0.1	18.0	0.0	21.0	60.0		50	ე.0	
Soil moisture samples		0.1		77.8	0.1	185.3	2.1	17.7		17.2	24.7	3.5	21.2	7.6	13.6	5.9					12.0														
Soil moisture samples	N 4 A 3 /		7.4	220.0	0.3	892.0	3.0	8.0		36.0	25.0	2.0	23.0	0.3	34.0	5.7	2,400			0.3	75.0	1.6	5.1	_	0.1	52.0	0.1	18.0	0.0	21.0	60.0		50		
· ·	MAX	27.8	7.7	330.0	0.5	1154.0	6.0	33.0		60.3	60.0	7.0	53.0	11.0	53.3	14.0	7,500			0.3	92.0	1.6	5.1	49.0	0.1	52.0	0.1	18.0	0.0	21.0	60.0		50	J.0	
i	;																				1	1			1		1	1	1	1		1			
	n	2	2	1	2	2			1	2	2	2	2	2	2	1			1		2	1	1											+	
		29.1		54.0	6.8	603.5			28.0	31.9	2.4	2.3	0.0	29.5	29.5	0.1			12.0			46.0	0.0											$-\!\!\!+\!\!\!\!+$	
		0.5	6.7	540	0.1	81.3			20.0	24.3	0.9	0.9	0.0	23.3	23.3	0.4			12.0		0.7	46.0	0.0											+	
			6.7	54.0 54.0	6.7 6.8	546.0 661.0			28.0 28.0	14.7 49.0	1.7 3.0	1.7 3.0	0.0	13.0 46.0	13.0 46.0	0.1			12.0 12.0		60.0 61.0	46.0 46.0	0.0											+	
	n	29.4	2	54.0	2	2			28.0	49.0	2	2	2	2	2	0.1			12.0		2	1	1											+	
		30.4			6.4	707.5				43.5	8.0	7.9	0.0	35.5	35.5						52.5	18.0	0.0											-	
		3.3			0.2	186.0				19.0	5.7	5.7	0.0	24.7	24.7						41.7	10.0	0.0											\vdash	
			6.4		6.2	576.0				30.0	3.9	3.9	0.0	18.0	18.1						23.0	18.0	0.0												
			6.6		6.5	839.0				56.9	12.0	11.9	0.1	53.0	53.0						82.0	18.0	0.0												
	n	2	2	2	2	2			2	2	2	2	2	2	2	2					2	1	1												
MF	MEAN	29.7		48.5	6.4	793.0			52.5	50.5	4.5	4.5	0.0	46.0	46.0	0.5					66.0	53.0	0.0												
TA1-LY-24-S STD.	TD. DEV.	1.1		23.3	0.4	106.1			40.3	12.9	3.0	2.9	0.0	9.9	9.9	0.3																			
IV			6.4	32.0	6.1	718.0			24.0	41.4	2.4	2.4	0.0	39.0	39.0	0.3							0.0												
M	MAX		6.7	65.0	6.7	868.0			81.0	59.6	6.6	6.5	0.1	53.0	53.1	0.7					66.0	53.0	0.0						1					\bot	
	n	2	2	1	2	2			1	2	2	2	2	2	2	1					2	1	1											4	
		31.1		11.0	5.9	670.0			10.0	48.9	5.9	5.9	0.0	43.0	43.0	0.0						36.0	0.0											4	
	TD. DEV.			44.0	0.1	315.4			40.0	4.1	5.8	5.8	0.0	9.9	9.9	0.0					10.6	26.0	0.0											4	
		29.1		11.0	5.8	447.0			10.0	46.0	1.8	1.8	0.0	36.0	36.0	0.0						36.0												4	
		33.1	6.7	11.0	5.9	893.0			10.0	51.8 2	10.0	10.0	0.0 2	50.0 2	50.0	0.0			1		69.0	36.0	0.0											4	
	n MEAN	28.9	1	75.0	6.7	2 928.5			28.0	47.4	3.4	3.4	0.0	44.0	2 44.0	0.8			1 11.0			50.0												+	
		1.6	\dashv	73.0	0.2	33.2			20.0	8.2	0.3	0.3	0.0	8.5	8.5	0.0			11.0		4.2	50.0	0.0		1				 					+	
		27.7	6.8	75.0	6.5	905.0			28.0	41.6	3.2	3.2	0.0	38.0	38.0	0.8			11.0			50.0	0.0											+	
		30.0		75.0	6.8	952.0			28.0	53.2	3.6	3.6	0.0	50.0	50.0	0.8			11.0				0.0											+	
			2	. 5.0	2	2				2	2	2	2	2	2	5.0					2	1	1												
	MEAN				5.9	844.0				49.5	5.0	4.9	0.0	44.5	44.5							47.0												\dashv	
	TD. DEV.				0.6	33.9				5.0	1.5	1.5	0.0	3.5	3.5						2.1														
		27.9	6.1		5.5	820.0				45.9	3.9	3.9	0.0	42.0	42.0							47.0	0.0												
M		30.7			6.3	868.0				53.0	6.0	6.0	0.0	47.0	47.0							47.0													

0				Total		Specific					l <u>.</u>										Anions						Cation	IS			Hydrogen			
Sample ID	Statistical	Temp	рН	Alkalinity	DO	Conductance		CBOD ₅ COD	TN	TKN	Organic N		NOx	TIN	TP	Fecal (Ct/100 mL)	TOC	DOC													Sulfide	Sulfid	TS	Sucralose
	Parameter	(°C)		(mg/L)	(mg/L)	(μS)	(IIIg/L)	(mg/L) (mg/L)	(mg/L N)	(IIIg/L N)	(mg/L N)	(mg/L N)	(IIIg/L N)	(mg/L N)	(IIIg/L)	(CU IOU IIIL)	(IIIg/L)	(IIIg/L)	F-	CI. NO	₃ -N-NO	₂ -N ⁻ PO ₄ -	P SO₄	В	Ca	Fe	Mg	Mn	K	Na	(Unionized	е		(ug/L)
	n	2	2	2	2	2		2	2	2	2	2	2	2	2					2	1 1	L												
	MEAN	30.6		34.5	4.9	945.0		45.0	55.3	3.7	3.6	0.0	51.7	51.7	0.3				7	3.5 5	3.0 0.	3												
TA2-LY-24-S	STD. DEV.	2.5		3.5	0.4	12.7		14.1	1.6	0.8	0.8		2.3	2.3	0.0					6.4														
	MIN	28.8		32.0	4.6	936.0		35.0	54.2	3.1	3.1	0.0	50.0	50.0	0.3					9.0 5	_	_												
	MAX	32.3	6.7	37.0	5.1	954.0		55.0	56.4	4.2	4.2	0.0	53.3	53.3	0.4					8.0 5	3.0 0.	3												
	n	2	2	1	2	2		1	2	2	2	2	2	2	1			1	1		2 1	1	1	1	1	1	1	1	1	1				
	MEAN	29.8		11.0	5.7	766.0		38.0	38.2	2.6	2.6	0.0	35.6	35.6	0.1			16.0			5.0 0.	1 0.0	70.0	0.2	45.0	0.1	15.0	0.0	11.0	88.0				
TA2-LY-42-S	STD. DEV.	2.2			0.3	103.2			1.5	0.6	0.6		2.0	2.0							.4													—
	MIN			11.0	5.5	693.0		38.0	37.1	2.2	2.2	0.0	34.1	34.1	0.1			16.0		8.0 3		1 0.0		0.2			15.0		11.0					—
	MAX	31.3	6.4	11.0	5.9	839.0		38.0	39.2	3.0	3.0	0.0	37.0	37.0	0.1			16.0			5.0 0.		70.0	0.2	45.0	0.1	15.0	0.0	11.0	88.0				
	n	2	2	2	2	2		2	2	2	2	2	2	2	2						1 1		_		-		-							
	MEAN	28.8		115.0	6.9	710.0		21.5	14.1	1.4	1.3	0.0	12.8	12.8	0.9					6.5 2	4.0 0.	0	_		-		-							
TA3-LY-12-S	STD. DEV.	0.1		7.1	0.1	118.8	<u> </u>	6.4	16.4	0.5	0.5	0.0	15.9	15.9	1.2					7.8		2	_	+	 		-	-						
	MIN	28.7		110.0	6.8	626.0	<u> </u>	17.0	2.5	1.0	1.0	0.0	1.5	1.5	0.1					1.0 2				1	1					<u> </u>				
	MAX	28.9	7.1	120.0	7.0	794.0		26.0	25.7	1.7	1.7	0.0	24.0	24.0	1.8					2.0 2		U												
	n	2	2		2	2			2	2	2	2	2 20.5	2							1 1	L			-									
TA2 IV 24 C		28.9			5.8	761.5			31.9	2.4	2.4	0.0	29.5	29.5						4.0 2	7.0 0.	U												
TA3-LY-24-C	STD. DEV.	0.3			0.1	186.0			3.0	0.6	0.6	0.0	3.5	3.5						7.1	7.0	0	-		1		-							
		28.7			5.7	630.0			29.8	2.0	2.0	0.0	27.0	27.0						9.0 2			-		1		-							
		29.1	6.6		5.9	893.0			34.0	2.8	2.8	0.0	32.0	32.0	_			2		9.0 2			+	_			_		-					
	n	2	2	2	2	2		2	2	2	2	2	2	2	2			2			2 1	2			2	2	2	2	2	2				
TA2 IV 24 C		29.1		20.5	6.2	614.5		38.0	23.5	2.0	2.0	0.0	21.5	21.5	0.2			16.5			1.5 0.				28.0	_	13.5	0.0	1.5	61.5				
TA3-LY-24-S	STD. DEV.	0.5	<i>C</i> 2	2.1	6.2	92.6		20.0	10.7	1.5	1.5	0.0	9.2	9.2	0.0				0.0		.2	0.1		_	1.4		2.1	0.0	1.1	10.6		-		
	MIN	28.7 29.4		19.0 22.0	6.2	549.0 680.0		38.0 38.0	16.0	1.0	1.0	0.0	15.0 28.0	15.0 28.0	0.2			15.0 18.0		3.0 15 3.0 25		0 0.0		_	27.0 29.0		12.0 15.0		0.7 2.3	54.0 69.0				
		29.4	6.3	22.0	6.2	2		38.0	31.1	3.1	3.1	0.0	28.0	28.0	0.2			18.0			1 1		00.0	0.2	29.0	0.0	15.0	0.0	2.3	69.0				
	n MEAN	30.5			6.8	623.0			20.8	4.5	4.5	0.0	16.3	16.3						0.5 2														
TA3-LY-42-S	STD. DEV.	0.6			0.9	171.1			13.2	3.7	3.7	0.0	9.5	9.5						.4.8	3.0 0.	0						-						
1A3 E1 42 3	MIN	30.1	3 /1		6.1	502.0	1		11.5	1.9	1.9	0.0	9.6	9.6				+		0.0 2	3 0 0	0			1									$\overline{}$
	MAX	30.9			7.4	744.0			30.1	7.1	7.1	0.0	23.0	23.0						1.0 2	_													
	n	2	2	1	2	2		2	2	2	2	2	25.0	2	2			2			2 2	1	1	1	1	1	1	1	1	1				
	MEAN	31.6		32.0	6.8	524.0		21.0	37.2	1.7	1.7	0.0	35.5	35.5	4.7			9.8		2.5 30		0 5.7			45.0		14.0	0.0	5.5	56.0				
TA4-LY-12-S	STD. DEV.	5.2		32.0	0.6	363.5		1.4	3.1	1.0	1.0	0.0	2.1	2.2	2.3			1.7			.9	0 3.7	31.0	0.1	13.0	0.0	11.0	0.0	3.3	30.0				
2. 22 0	MIN	27.9	6.4	32.0	6.4	267.0		20.0	35.0	1.0	1.0	0.0	34.0	34.0	3.0			8.6		2.0 2		0 5.7	54.0	0.1	45.0	0.0	14.0	0.0	5.5	56.0				
				32.0	7.2	781.0		22.0	39.4	2.4	2.3	0.1	37.0	37.1	6.3					3.0 3			54.0		45.0		14.0		5.5	56.0				
	n	2	2	1	2	2		1	2	2	2	2	2	2	1						1 1				1									
		29.9		65.0	4.4	837.0		38.0	34.5	3.5	3.5	0.0	31.0	31.0	0.2					8.0 3		0												
TA4-LY-24-C	STD. DEV.	3.5			0.3	131.5			6.1	1.8	1.8		4.2	4.2						4.2														
		27.4	6.6	65.0	4.2	744.0		38.0	1	2.2	2.2	0.0	28.0	28.0	0.2					55.0 3	4.0 0.	0												
	MAX				4.6	930.0		38.0		4.8	4.8	0.0	34.0	34.0	0.2					1.0 3														
	n	2			2	2		1	2	2	2	2	2	2	1					2	1 1													
	MEAN				6.2	735.5		110.0	48.6	3.6	3.6	0.0	45.0	45.0	0.6					60.5 4														
TA4-LY-24-S	STD. DEV.				1.0	16.3			0.1	0.1	0.2	0.0	0.0	0.0						0.7							1							Ī
	MIN	29.8	6.5		5.5	724.0		110.0		3.5	3.5	0.0	45.0	45.0	0.6					60.0 4	5.0 0.	0												
	MAX				6.9	747.0		110.0		3.7	3.7	0.1	45.0	45.1	0.6					51.0 4							1							Ī
		2			2	2			2	2	2	2	2	2						2														
	MEAN				6.2	787.5			35.1	4.1	4.0	0.0	31.0	31.0						8.0 2														
TA4-LY-42-S	STD. DEV.				0.9	29.0			4.4	1.2	1.2	0.0	5.6	5.6						9.7														
	MIN		6.4		5.5	767.0			31.9	3.2	3.2	0.0	27.0	27.0					4	7.0 2	7.0 0.	0												
		30.7			6.8	808.0			38.2	4.9	4.9	0.0	35.0	35.0						9.0 2	70 0	n												

		_		Total		Specific					O · · ·			T			T.C.	200		Ani	ions					с	ations	<u> </u>			Hydrogen		
Sample ID	Statistical Parameter	Temp (°C)	рН	Alkalinity	DO (mg/L)	Conductance	ma/L	CBOE (ma/L	0 ₅ COD TN L) (mg/L) (mg/L N) ¹	(ma/L N)	Organic N (mg/L N) ²	NH ₃ -N (ma/L N)	NOx (ma/L N)	(ma/L N) ³	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (ma/L)													Sulfide (Unionized	Sulfid e	TS Sucra
	i didilictei			(mg/L)		(μο)	` `	,		, ,			, ,		(3 /	,	` 5 /	` ' '		NO ₃ -N	NO ₂ -N	PO ₄ -P	SO ₄	В	Ca	Fe	Mg	Mn	K	Na	(Ulliollized		(-3
	n	2	2		2	2			2	2	2	2	2	2					2														
		28.3			6.6	254.0			1.7	1.7	1.6	0.0	0.0	0.1					7.4														
01-BKG-24	STD. DEV.	2.8			0.1	25.5			0.2	0.2	0.2		0.0	0.0					1.5														
	MIN	26.3			6.5	236.0			1.5	1.5	1.5	0.0	0.0	0.0					6.3														
	MAX		7.2		6.6	272.0			1.8	1.8	1.8	0.0	0.0	0.1					8.4														
	n	1	1		1	1							1																				
		26.4			6.6	532.0																											
02-BKG-42	STD. DEV.																																
		26.4			6.6	532.0							0.0																				
	MAX	26.4	6.5		6.6	532.0							0.0																				
	n	1	1		1	1			1	1	1	1	1	1					1														
	MEAN	32.9			5.5	430.0			23.2	6.2	5.2	1.0	17.0	18.0					65.0														
1-PAN-12-N	STD. DEV.																																
		32.9			5.5	430.0			23.2	6.2	5.2	1.0	17.0	18.0					65.0														
	MAX	32.9	6.8		5.5	430.0			23.2	6.2	5.2	1.0	17.0	18.0					65.0														
	n	1	1		1	1			1	1	1	1	1	1					1														
	MEAN	32.9			5.5	430.0			23.2	6.2	5.2	1.0	17.0	18.0					65.0														
A2-PAN-12-N	STD. DEV.																																
		32.9			5.5	430.0			23.2	6.2	5.2	1.0	17.0	18.0					65.0														
	MAX	32.9	6.8		5.5	430.0			23.2	6.2	5.2	1.0	17.0	18.0					65.0														
	n	1	1		1	1			1	1	1	1	1	1					1														
	MEAN	29.1			4.0	324.0			16.3	6.6	6.1	0.6	9.7	10.3					29.0														
3-PAN-12-N	STD. DEV.																																
		29.1			4.0	324.0			16.3	6.6	6.1	0.6	9.7	10.3					29.0														
	MAX	29.1	5.9		4.0	324.0			16.3	6.6	6.1	0.6	9.7	10.3					29.0														
	n	1	1		1	1			1	1	1	1	1	1					1														
	MEAN	27.7			4.0	331.0			11.7	5.7	5.3	0.4	6.0	6.4					25.0														
44-PAN-12-N	STD. DEV.																																
	MIN	27.7	6.5		4.0	331.0			11.7	5.7	5.3	0.4	6.0	6.4					25.0														
	MAX	27.7	6.5		4.0	331.0			11.7	5.7	5.3	0.4	6.0	6.4					25.0														
oundwater samp	oles																																
	n	2	2		2	2			2	2	2	2	2	2					2														
	MEAN	26.4			1.4	339.5			7.4	1.5	1.4	0.0	6.0	6.0					15.5														
1-PZ-09-I7	STD. DEV.	0.9			0.8	106.8			0.6	0.5	0.5	0.0	0.1	0.1					3.5														
	MIN	25.7	5.5		0.8	264.0			7.0	1.1	1.1	0.0	5.9	5.9					13.0														
	MAX	27.0	5.6		2.0	415.0			7.8	1.8	1.8	0.0	6.0	6.0					18.0														
	n	2	2		2	2			2	2	2	2	2	2					2														
	MEAN	26.8			0.7	271.0			7.6	1.0	0.9	0.0	6.7	6.7					16.5														
1-PZ-09-M9	STD. DEV.				0.1	53.7			1.3	0.2	0.2	0.0	1.5	1.5					4.9														
		26.4	5.3		0.6	233.0			6.7	0.8	0.8	0.0	5.6	5.6					13.0														
		27.1			0.8	309.0			8.5	1.1	1.1	0.0	7.7	7.7					20.0														
	n	2			2	2			2	2	2	2	2	2					2														
	MEAN	27.8			2.7	869.0			13.2	2.4	2.3	0.1	10.8	10.9					31.5														
1-PZ-09-N3					2.2	330.9			9.8	1.0	1.0	0.0	8.8	8.8					2.1														
		27.3	6.5		1.1	635.0			6.3	1.7	1.6	0.1	4.6	4.7					30.0														
		28.2			4.2	1103.0			20.1	3.1	3.0	0.1	17.0	17.1					33.0														
	n	2		1	2	2			1 2	2	2	2	2	2	1				2														
		27.4		12.0	1.2	420.5			33.0 10.9	1.5	1.5	0.0	9.5	9.5	2.6				24.5														
1-PZ-09-07	STD. DEV.				0.7	108.2			1.2	0.9	0.8	0.0	0.4	0.4					4.9														
		27.1	5.4	12.0	0.7	344.0			33.0 10.1	0.9	0.9	0.0	9.2	9.2	2.6				21.0														
		27.6			1.7		1		33.0 11.8	2.1	2.1	0.0	9.7	9.7	2.6				28.0													1	

				Total		Specific	1					l									Anio	ons						Cation	s			Hydrogen			<u> </u>
Sample ID	Statistical Parameter	(°C)	рН	Alkalinity (mg/L)	DO (mg/L)	Conductance (µS)		$ CBOD_5 COD (mg/L) (mg/L)$	TN (mg/L N) ¹	TKN (mg/L N)	Organic N (mg/L N) ²		NOx (mg/L N)	TIN (mg/L N) ³	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	F.	CI-	NON	NO₂-N⁻ P	OB-	so.	В	Ca	Fe	Mg	Mn	К	Na	Sulfide (Unionized	Sulfid e	TS	Sucralose (ug/L)
	n	2	2	(3)	2	2			2	2	2	2	2	2					- +	2	NO3-IN	NO2-N F	O ₄ -F	304	-	Ca	re	IVIG	IVIII		INA	,			
	MEAN	25.7			0.9	309.0			8.1	3.0	2.9	0.1	5.2	5.2						8.4															
TA1-PZ-09-RS16	STD. DEV.	0.1			0.5	7.1			2.7	2.1	2.0	0.1	0.6	0.7						1.7															
	MIN	25.6	5.7		0.5	304.0			6.2	1.5	1.5	0.0	4.7	4.7						7.2															
	MAX				1.2	314.0			10.0	4.4	4.3	0.1	5.6	5.7						9.6															
	n	2	2		2	2			2	2	2	2	2	2						2															
	MEAN	26.2			2.5	350.5			9.6	1.8	1.7	0.0	7.8	7.8						14.9															
TA1-PZ-09-RS18	STD. DEV.	0.6			3.0	17.7			5.0	0.5	0.5	0.0	4.5	4.5						7.2															
	MIN	25.8	5.5		0.3	338.0			6.0	1.4	1.4	0.0	4.6	4.6						9.8															
	MAX	26.6			4.6	363.0			13.1	2.1	2.1	0.0	11.0	11.0						20.0															
	n	2	2	1	2	2		1	2	2	2	2	2	2	1		1	1	1	2	1		1	1	1	1	1	1	1	1	1				
	MEAN	26.4		2.0	3.6	381.0		10.0	15.7	1.2	1.2	0.0	14.5	14.5	0.1		2.1	2.0	0.1	33.5	0.0		0.0	56.0	0.1	23.0	0.0	5.5	0.0	9.4	16.0				
TA1-PZ-11-EF2	STD. DEV.	0.8			3.9	80.6			5.2	0.3	0.3		4.9	4.9						13.4															
	MIN	25.8	4.2	2.0	0.8	324.0		10.0	12.0	1.0	1.0	0.0	11.0	11.0	0.1		2.1	2.0			0.0		0.0	56.0	0.1	23.0	0.0	5.5	0.0	9.4	16.0				
	MAX	27.0		2.0	6.3	438.0		10.0	19.4	1.4	1.4	0.0	18.0	18.0	0.1		2.1	2.0									0.0	5.5	0.0	9.4	_				
	n	2	2	1	2	2		1	2	2	2	2	2	2	1					2															
	MEAN	27.6		2.0	1.9	268.0		10.0	10.1	1.4	1.3	0.0	8.7	8.7	0.1					19.0															
TA1-PZ-11-J4	STD. DEV.	0.5			2.1	45.3			1.6	0.2	0.2		1.8	1.8						4.2															
	MIN	27.2	4.4	2.0	0.4	236.0		10.0	8.9	1.2	1.2	0.0	7.4	7.4	0.1					16.0															
		27.9	4.5	2.0	3.4	300.0		10.0	11.2	1.5	1.5	0.0	10.0	10.0	0.1					22.0															
	n	2	2	1	2	2		1	2	2	2	2	2	2	1					2															
	MEAN	27.4		2.0	0.4	244.0		10.0	8.6	1.8	1.8	0.0	6.8	6.8	0.1					14.0															
TA1-PZ-11-K4	STD. DEV.	0.7			2.0	31.8		20.0	1.3	0.4	0.4	0.0	1.8	1.8	0.1					3.5															
	MIN	26.4	4.3	2.0	0.4	244.0		10.0	8.6	1.2	1.2	0.0	6.8	6.8	0.1					14.0															
	MAX	27.4	4.4	2.0	3.2	289.0		10.0	10.5	1.8	1.8	0.0	9.3	9.3	0.1					19.0															
	n	2	2	1	2	2		1	2	2	2	2	2	2	1		1	1	1	2	1		1	1	1	1	1	1	1	1	1				
	MEAN	26.7	_	2.0	3.2	729.0		10.0	67.2	2.7	2.6	0.0	64.5	64.5	0.3		4.2	2.8	0.0		40.0		_	41.0	0.1	46.0		21.0	0.0	5.2	56.0				
TA1-PZ-11-L2	STD. DEV.	1.5		2.0	3.8	75.0		10.0	39.1	1.6	1.6	0.0	37.5	37.5	0.5		"-	2.0		26.2	10.0		0.0	11.0	0.1	10.0	0.0	21.0	0.0	J.2	30.0				
	MIN	25.6	4.2	2.0	0.5	676.0		10.0	39.5	1.5	1.5	0.0	38.0	38.0	0.3		4.2	2.8			40.0		0.0	41.0	0.1	46.0	0.0	21.0	0.0	5.2	56.0				
			4.4	2.0	5.9	782.0		10.0	94.8	3.8	3.8	0.0	91.0	91.0	0.3		4.2							41.0		46.0		21.0		5.2					
	n	2	2	1	2	2		1	2	2	2	2	2	2	1			2.0	0.0	2	10.0		0.0	12.0	0.1		0.0		0.0	5.2	30.0				
		26.6	-	2.1	2.7	321.0		10.0	12.0	1.3	1.3	0.0	10.8	10.8	0.1					27.5															
TA1-PZ-11-L3	STD. DEV.	1.6			3.1	15.6		10.0	3.6	0.4	0.4	0.0	3.2	3.2	0.1					0.7															
	MIN	25.5	45	2.1	0.5	310.0		10.0		1.0	1.0	0.0	8.5	8.5	0.1					27.0															
	MAX	27.7	4.5	2.1	4.9	332.0		10.0	14.6	1.6	1.6	0.0	13.0	13.0	0.1					28.0															
	n	1	2	1	2	2		1	2	2	2	2	2	2	1					2															
	MEAN	25.7		2.0	3.4	334.4		10.0	14.2	1.2	1.2	0.0	13.0	13.0	0.0					19.5															
TA1-PZ-11-L4	STD. DEV.	23.7		2.0	1.5	112.6		10.0	7.0	0.1	0.1	0.0	7.1	7.1	0.0					7.8															
17(1121121		25.7	1.1	2.0	2.3	254.7	1	10.0		1.1	1.1	0.0	7.1	7.1	0.0					14.0															
	MAX				4.4	414.0	1		19.1	1.3	1.3	0.0	18.0	18.0	0.0					25.0															
	n	2	2	1	2	2	1	10.0	2	2	2	2	2	2	1				-	2															
	MEAN			2.0	1.6	290.5	1		11.0	1.1	1.1	0.0	9.9	9.9	0.0				-	16.5		+													—
TA1-PZ-11-L5	STD. DEV.			2.0	1.8	21.9	1	10.0	0.5	0.2	0.2	0.0	0.2	0.2	0.0		1			2.1			\dashv	+				1		+					
1011211-13			11	2.0	0.3	275.0		10.0		1.0	1.0	0.0	9.7	9.7	0.0					15.0			-+							+					
	MAX			2.0	2.8	306.0	+	10.0		1.3	1.3	0.0	10.0	10.0	0.0					18.0		+						-		+			 		
		27.5		2.0	2.8	306.0		10.0			2		2	2	0.0					2															
	n Naca N								2	2		2								14.0															
TA1 D7 16 17	MEAN STD, DEV				0.6	305.0	-		10.8	1.5	1.4	0.0	9.3	9.3																					—
TA1-PZ-16-I7	STD. DEV.		F 0		0.4	19.8			3.9	0.1	0.1	0.0	3.8	3.8						1.4															—
	MIN				0.3	291.0			8.0	1.4	1.4	0.0	6.6	6.6						13.0															
	MAX	26.4	6.2		0.9	319.0			13.5	1.5	1.5	0.0	12.0	12.0						15.0															

1				Total	1	Cnacific	I		1			1								Anions						Catio	ns			Hydrogen			
Sample ID	Statistical	Temp	nН	Total Alkalinity	DO	Specific Conductance		CBOD ₅ COD	TN	TKN	Organic N		NOx	TIN	TP	Fecal	TOC DOC			Amons	<u> </u>					Calic	113			Sulfide	Sulfid	TS	Sucralose
- Campio is	Parameter			(mg/L)	(IIIg/L)	(μS)	(mg/L)	(mg/L) (mg/L)	(mg/L N) ¹						(mg/L)	(Ct/100 mL)	(mg/L) (mg/L)		CI. NO	₃-N¹ NO	₂ -N ⁻ PO	P SC	₄ - В	Ca	Fe	e Mg	M	n K	Na	(Unionized	e		(ug/L)
	n	2	2		2	2			2	2	2	2	2	2					2	_				_				_					
		25.9			0.5	286.5			10.3	1.3	1.2	0.0	9.0	9.0					L4.5		_	_		_		_		_					
TA1-PZ-16-M9	STD. DEV.	0.8			0.4	16.3	1		3.3	0.5	0.5	0.0	2.8	2.8					2.1					-		-		-					
	MIN	25.3			0.2	275.0			7.9	0.9	0.9	0.0	7.0	7.0					13.0	-								-					
		26.4			0.8	298.0			12.6	1.6	1.6	0.0	11.0	11.0					16.0														
	n	25.7	2		2	2			2	2	2	2	2	2					2 L5.0	_		_		-	-			-					
TA1 D7 16 N2		1.1			0.6 0.1	278.5 2.1			9.3 1.0	1.7	1.7 0.0	0.0	7.6	7.6 1.0					15.0	-				-		-		-					
TA1-PZ-16-N3	STD. DEV.	24.9	E 0		0.1	277.0			8.6	1.7	1.7	0.0	1.0 6.9	6.9				- 1	L5.0														
		26.4			0.5	280.0			10.0	1.7	1.7	0.0	8.3	8.3					L5.0														
	n	20.4	2	1	2	200.0		1	2	2	2	2	2	2	1				2														
	MEAN	25.8		6.3	0.2	285.0		13.0	8.9	1.3	1.3	0.0	7.6	7.6	1.9				12.5	+		-				-		+	-				
TA1-PZ-16-07	STD. DEV.	1.1		0.3	0.2	24.0		13.0	2.8	0.1	0.1	0.0	2.9	2.9	1.5				2.1	_		+		+		+		+	+				
17.11.2.10.07	MIN	25.0	5.0	6.3	0.2	268.0		13.0	6.9	1.2	1.2	0.0	5.5	5.5	1.9				11.0														
		26.5		6.3	0.2	302.0		13.0	10.8	1.4	1.4	0.0	9.6	9.6	1.9				14.0	+				+									
	n	2	2	0.3	2	2		15.0	2	2	2	2	2	2	1.5				2														
		25.2			0.3	365.0			9.1	2.1	2.1	0.0	7.0	7.0					14.5														
TA1-PZ-16-RS16	STD. DEV.	0.6			0.2	97.6			2.4	0.4	0.4	0.0	2.0	2.0					0.7														
	MIN	24.8	5.1		0.1	296.0			7.4	1.8	1.8	0.0	5.6	5.6					L4.0														
		25.6			0.4	434.0			10.8	2.4	2.4	0.0	8.4	8.4					15.0														
	n	2	2		2	2			2	2	2	2	2	2					2														
	MEAN	25.9			2.5	306.5			6.8	1.4	1.4	0.0	5.4	5.4					10.4														
TA1-PZ-16-RS18	STD. DEV.	0.1			3.0	44.5			1.1		0.0	0.0	1.1	1.1					0.8														
	MIN	25.8	5.4		0.3	275.0			6.0	1.4	1.4	0.0	4.6	4.6				9	9.8														
	MAX	26.0	6.3		4.6	338.0			7.5	1.4	1.4	0.0	6.1	6.1				1	11.0														
	n	2	2		2	2			2	2	2	2	2	2					2														
	MEAN	26.6			1.6	309.0			9.4	1.9	1.8	0.0	7.6	7.6				1	19.5														
TA2-PZ-09-17	STD. DEV.	0.6			1.1	63.6			2.3	0.1	0.1	0.0	2.2	2.2				9	9.2														
	MIN	26.1	5.5		0.8	264.0			7.8	1.8	1.8	0.0	6.0	6.0				1	L3.0														
	MAX	27.0	5.7		2.3	354.0			11.0	1.9	1.9	0.0	9.1	9.1				2	26.0														
	n	2	2		2	2			2	2	2	2	2	2					2														
	MEAN	27.3			2.2	447.0			10.4	3.8	3.7	0.1	6.6	6.7				2	21.0														
TA2-PZ-09-L8	STD. DEV.	0.6			2.3	39.6			0.1	1.3	1.2	0.1	1.1	1.1					2.8														
	MIN	26.9			0.6	419.0			10.3	2.9	2.8	0.1	5.8	5.9					19.0														
	MAX	27.7			3.8	475.0			10.5	4.7	4.6	0.1	7.4	7.5					23.0														
	n	2	2		2	2			2	2	2	2	2	2					2														
		26.1			0.6	465.5			18.4	4.6	4.5	0.0	13.8	13.8					17.5														
TA2-PZ-09-M4	STD. DEV.	0.6			0.1	61.5			12.0	4.6	4.6	0.0	7.4	7.4					L4.9														
	MIN	25.7			0.5	422.0			9.9	1.3	1.3	0.0	8.6	8.6					6.9														
	MAX				0.7	509.0			26.8	7.8	7.8	0.0	19.0	19.0					28.0	_													
	n		2		2	2			2	2	2	2	2	2					2	+	+	_	_	_	+-	_	-	+	-	-	1		
TA 2 D7 C2 N7	MEAN				0.4	328.0	-	 	16.2	4.1	4.1	0.0	12.1	12.1					26.0	+	+	-		-	+	+	+	+	-	1	1		
TA2-PZ-09-N7	STD. DEV.		- ·		0.1	106.1	-	 	10.3	3.3	3.3	0.0	7.0	7.0			- 		14.1	-	-			+		_	-	_			-		
		26.6			0.3	253.0	-		8.9	1.8	1.7	0.0	7.1	7.2					16.0 36.0	+	+	+	_	+-	+	_	+	+	+	-	-		
		27.7	6.3		0.4	403.0			23.4	6.4	6.4	0.1	17.0	17.0						_	-												
	n MEAN	26.7	2		2	2 179.5			2	2	1.7	2	5.2	5.2					2 4.4	-													
TA2-PZ-09-TU19	MEAN STD. DEV.				1.2 0.1	9.2			6.9	1.7 0.6	0.5	0.0	0.7	0.7					0.8	+													
177-17-03-1013		26.5	4.2		1.1	173.0			0.1 6.8	1.3	1.3	0.0	4.7	4.8					3.8														
		26.8			1.1	186.0			7.0	2.1	2.0	0.0	5.7	5.7					4.9														

1		_		Total		Specific		0000	COD TN	T (A)	0			TIM				200			Anio	ons						Cations	i			lydrogen	0.15.1	١
Sample ID	Statistical	(°C)	рН	Alkalinity	DO (mg/L)	Conductance		CBOD ₅	COD TN (mg/L) (mg/L N)	TKN (mg/LN)	Organic N	NH ₃ -N	NOx	TIN (mg/L N) ³	TP (mg/L) (0	Fecal		DOC (mg/L)													_	Sulfide	Sulfid TS	Sucralose
	Parameter	(0)		(mg/L)	(IIIg/L)	(μS)	(IIIg/L)	(IIIg/L)	(IIIg/L) (IIIg/L N)	(IIIg/L IV)	(IIIg/L N)	(IIIg/L N)	(IIIg/L IV)	(IIIg/L N)	(IIIg/L) (C	50 100 IIIL)	(IIIg/L)	(IIIg/L)	F-	CI-	NO ₃ -N	NO ₂ -N	PO ₄ -P	SO ₄	В	Ca	Fe	Mg	Mn	ĸ	Na (l	Jnionized	е	(ug/L)
	n	2	2		2	2			2	2	2	2	2	2						2														
	MEAN	26.6			0.4	169.0			4.4	1.0	1.0	0.0	3.4	3.4						4.1														
TA2-PZ-09-TU21	STD. DEV.	0.4			0.1	1.4			0.8	0.4	0.4	0.0	1.2	1.2						0.7														
	MIN	26.3	4.4		0.3	168.0			3.8	0.8	0.7	0.0	2.5	2.5						3.6														
	MAX	26.8	4.6		0.4	170.0			5.0	1.3	1.3	0.0	4.2	4.2						4.6														
	n	2	2	1	2	2			1 2	2	2	2	2	2	1					2														
	MEAN	26.4		2.0	1.8	361.0			10.0 14.3	1.8	1.7	0.0	12.5	12.5	0.0					26.5														
TA2-PZ-10-H5	STD. DEV.	1.3			1.9	65.1			2.8	0.6	0.6	0.0	2.1	2.1						9.2														
			4.3	2.0	0.4	315.0			10.0 12.3	1.3	1.3	0.0	11.0	11.0	0.0					20.0														
	MAX	27.3	4.3	2.0	3.1	407.0			10.0 16.2	2.2	2.2	0.0	14.0	14.0	0.0					33.0														
	n	2	2	1	2	2			1 2	2	2	2	2	2	1					2														
	MEAN	27.7		2.0	0.5	512.0			17.0 22.1	2.1	2.1	0.0	20.0	20.0	0.3					52.0														
TA2-PZ-10-J5	STD. DEV.	1.4			2.3	70.7			3.0	0.2	0.2	0.0	2.8	2.8						15.6														
			4.3	2.0	0.5	412.0			17.0 17.8	1.8	1.8	0.0	16.0	16.0	0.3					30.0														
	MAX		4.4	2.0	3.7	512.0			17.0 22.1	2.1	2.1	0.0	20.0	20.0	0.3					52.0														
	n	2	2	1	2	2			1 2	2	2	2	2	2	1					2														
		26.7		2.0	2.0	467.5			20.0 18.5	1.5	1.4	0.0	17.0	17.0	0.1					39.5														
TA2-PZ-10-K5	STD. DEV.	1.3			2.2	78.5			2.9	0.1	0.1	0.0	2.8	2.8						12.0														
			4.3	2.0	0.4	412.0			20.0 16.4	1.4	1.4	0.0	15.0	15.0	0.1					31.0														
	MAX		4.3	2.0	3.5	523.0			20.0 20.5	1.5	1.5	0.0	19.0	19.0	0.1					48.0														
	n	2	2	1	2	2			1 2	2	2	2	2	2	1					2														
		26.3		2.0	1.5	357.0			10.0 11.0	1.9	1.9	0.0	9.1	9.1	0.1					23.0														
TA2-PZ-10-L2	STD. DEV.	0.9			1.6	96.2			6.1	0.6	0.6	0.0	5.5	5.5					_	12.7														
			4.2	2.0	0.4	289.0	1		10.0 6.7	1.5	1.5	0.0	5.2	5.2	0.1					14.0														
		26.9	4.6	2.0	2.6	425.0			10.0 15.3	2.3	2.3	0.0	13.0	13.0	0.1					32.0														
	n	2	2	1	2	2			1 2	2	2	2	2	2	1					2														
TA 2 D7 10 12		26.2		2.0	1.3	350.5	-		10.0 9.8	1.4	1.4	0.0	8.4	8.4 3.7	0.0					21.5											-			
TA2-PZ-10-L3	STD. DEV.	1.0	4.2	2.0	1.3	95.5	-		3.3	0.4	0.4	0.0	3.7		0.0					12.0											-			
			4.2	2.0	0.4	283.0	1		10.0 7.4	1.1	1.1	0.0	5.7	5.7	0.0					13.0 30.0														
	1		4.5	2.0	2.2	418.0			10.0 12.1	1.7	1.7	0.0	11.0	11.0	0.0		1	1	1		1		1	1	1	1	1	1		1	1			
	n NATA NI	26.5	2	1	2	624.0	1		1 2 10.0 31.4	2	2.3	2	29.0	20.0	1		2.7	1	0.1	2 57.0	1 21.0		0.0	64.0	1	35.0	0.0	10.0	0.0	1 11.0	35.0			
TA2-PZ-10-L4				2.0	1.5	107.5	1		t	2.4		0.0		29.0	0.0		2.7	2.3		14.1	21.0		0.0	04.0	0.1	35.0	0.0	10.0	0.0	11.0	35.0			
TAZ-FZ-10-L4	STD. DEV.	0.8 25.9	4.3	2.0	1.8 0.2	548.0	1		10.0 21.4	0.1 2.3	0.1 2.3	0.0	14.1 19.0	14.1	0.0		2.7	2.3		47.0	21.0		0.0	64.0	0.1	35.0	0.0	10.0	0.0	11.0	25.0			
		27.1	4.4	2.0	2.7	700.0			10.0 21.4 10.0 41.3	2.3	2.3	0.0	39.0	19.0 39.0	0.0		2.7	2.3		67.0	21.0		0.0	64.0		35.0		10.0	0.0		35.0			
	n	2	2	2.0	2.7	2			1 2	2.4	2.4	2	39.0	2	1		2.7	2.3	0.1	2	21.0		0.0	04.0	0.1	33.0	0.0	10.0	0.0	11.0	33.0			
	-	26.6		2.0	1.8	500.0	1		10.0 16.1	1.3	1.3	0.0	14.8	14.8	0.1					42.0														
TA2-PZ-10-L5	STD. DEV.	1.1		2.0	1.3	5.7			7.4	1.5	0.0	0.0	7.4	7.4	0.1					5.7														
1A2 12 10 L5			4.2	2.0	0.8	496.0	1		10.0 10.9	1.3	1.3	0.0	9.6	9.6	0.1					38.0														
			4.8	2.0	2.7	504.0	1		10.0 21.3	1.3	1.3	0.0	20.0	20.0	0.1					46.0														
	n	2	2	1	2.7	2			1 2	2	2	2	2	2	1					2														
		26.7		2.0	2.1	418.0			10.0 19.1	1.1	1.1	0.0	18.0	18.0	0.1					33.0														
TA2-PZ-10-L6		1.1		2.0	1.9	60.8	 		1.3	0.2	0.2	0.0	1.4	1.4	5.1					11.3											1			
		25.9	4.3	2.0	0.7	375.0	 		10.0 18.2	1.0	1.0	0.0	17.0	17.0	0.1					25.0											1			
		27.5		2.0	3.4	461.0			10.0 18.2	1.2	1.2	0.0	19.0	19.0	0.1					41.0														
		2	2	0	2	2			2	2	2	2	2	2	J.1					2														
		25.8	-		0.3	212.0			3.2	0.8	0.8	0.0	2.5	2.5						7.3														
TA2-PZ-16-I7		1.6			0.3	2.8			1.8	0.3	0.3	0.0	1.5	1.5						0.1														
		24.6	5.2		0.2	210.0			2.0	0.6	0.5	0.0	1.4	1.4						7.2														
		26.9			0.2	214.0			4.5	1.0	1.0	0.0	3.5	3.5	1					7.3														

	Statistical	Tomp		Total	DO	Specific	тее	CROD	COD TN	TVN	Organic N	NILL NI	NOv	TIN TP	Food	тос	DOC			Anio	ns						Cations				lydrogen	Sintial	Sugralage
Sample ID	Statistical Parameter	(°C)		lkalinity	(mg/L)	Conductance				TKN (mg/L N)	Organic N		NOx (mg/LN)	TIN TP (mg/L N) ³ (mg/L)	Fecal (Ct/100 ml)																Sulfide	Sulfid TS	Sucralose (ug/L)
	Parameter	(0)		(mg/L)	(iiig/L)	(μS)	(ilig/L)	(IIIg/L)	(iiig/L) (iiig/L N)	(IIIg/L IV)	(IIIg/L IV)	(IIIg/L N)	(IIIg/L IV)	(ilig/L N) (ilig/L)	(00 100 1112)	(IIIg/L)	(IIIg/L)	F ⁻	CI-	NO ₃ -N-N	NO ₂ -N	PO₄-P⁻	SO ₄ -	В	Ca	Fe	Mg	Mn	K	Na (U	nionized	•	(ug/L)
	n	2	2		2	2			2	2	2	2	2	2					2														
	MEAN	26.1			0.2	224.5			3.2	0.8	0.8	0.0	2.4	2.4					6.9														
TA2-PZ-16-L8	STD. DEV.	1.7			0.1	2.1			2.1	0.4	0.4	0.0	1.8	1.8					0.4														
			5.6		0.1	223.0			1.7	0.6	0.5	0.0	1.1	1.1					6.6														
	MAX	27.3	5.8		0.2	226.0			4.7	1.1	1.1	0.0	3.6	3.6					7.1														
	n	2	2		2	2			2	2	2	2	2	2					2														
	MEAN	25.5			0.3	234.5			2.0	0.5	0.5	0.0	1.5	1.5					6.6														
TA2-PZ-16-M4	STD. DEV.	1.1			0.2	9.2	ļ		0.5	0.1	0.1	0.0	0.4	0.4					0.9														
		24.7			0.1	228.0			1.6	0.4	0.4	0.0	1.2	1.2					5.9														
		26.2			0.4	241.0			2.3	0.6	0.6	0.0	1.7	1.7					7.2														
	n	2	2		2	2	-		2	2	2	2	2	2					2														
		25.9			0.4	215.0	-	-	2.8	0.7	0.6	0.1	2.1	2.2					6.4														
TA2-PZ-16-N7	STD. DEV.	1.1			0.4	5.7	-	1	1.4	0.1	0.1	0.0	1.3	1.3					0.6														
		25.1			0.1	211.0	1	1	1.8	0.6	0.6	0.0	1.2	1.2					6.0														
	1		6.1		0.6	219.0	-		3.8	0.8	0.7	0.1	3.0	3.1					6.8														
	n	1	2		2	2	 		2	2	2	2	2	2					2														
TA 2 D7 46 TH40		25.7			0.4	197.5	-		3.9	0.6	0.6	0.0	3.3	3.3					6.2														
TA2-PZ-16-TU19	STD. DEV.	25.7	F 2		0.2	12.0	-	1	2.8	0.1	0.1	0.0	2.7	2.7					0.5														
		25.7			0.2	189.0	+		2.0	0.6	0.5	0.0	1.4	1.4					5.8														
	1	25.7	2		2	206.0	+		5.9	0.7	0.6	0.1	5.2 2	5.3					6.5	-								-					
	n MEAN	25.6	2		0.4	2 188.5	1	l	3.1	0.9	2 0.9	0.0	2.1	2.1					5.5	1								1					
TA2-PZ-16-TU21	STD. DEV.	0.5			0.4	4.9	1		1.7	0.9	0.9	0.0	1.6	1.6					0.1	-													
TAZ-1 Z-10-1021		25.2	5.0		0.3	185.0	1		1.7	0.0	0.0	0.0	1.0	1.0					5.4	-													
			5.2		0.6	192.0	-	1	4.3	1.0	0.9	0.0	3.3	3.3					5.6									-					
	n	2	2		2	2			2	2	2	2	2	2					2														
		26.8			3.4	1357.0	1	l	7.9	2.1	2.0	0.0	5.8	5.8					22.0														
TA3-PZ-09-I7	STD. DEV.	0.3			0.1	671.8	1		3.0	0.1	0.1	0.0	3.0	2.9					11.3														
		26.6	7.0		3.3	882.0			5.7	2.0	1.9	0.0	3.7	3.8					14.0														
			7.1		3.4	1832.0			10.0	2.1	2.1	0.1	7.9	7.9					30.0														
	n	2	2		2	2	1		2	2	2	2	2	2					2														
		26.8			0.7	745.5			9.8	3.0	3.0	0.0	6.8	6.8					19.0														
TA3-PZ-09-M9	STD. DEV.	0.9			0.5	409.4			1.6	0.4	0.4	0.0	2.0	2.0					5.7														
			6.4		0.3	456.0			8.7	2.7	2.7	0.0	5.4	5.5					15.0														
		27.4	6.5		1.0	1035.0			10.9	3.3	3.2	0.1	8.2	8.2					23.0														
	n	2	2		2	2			2	2	2	2	2	2					2														
	MEAN	26.7			0.6	737.5			8.4	3.1	3.0	0.1	5.3	5.4				1	20.0														
TA3-PZ-09-N3	STD. DEV.	1.1			0.2	286.4			1.6	1.6	1.5	0.0	3.1	3.1					2.8														
	MIN	25.9	6.4		0.4	535.0			7.3	2.0	1.9	0.1	3.1	3.2				1	18.0														
	MAX	27.5	6.5		0.7	940.0			9.5	4.2	4.1	0.1	7.5	7.6				1	22.0														
	n	2	2		2	2			2	2	2	2	2	2					2														
	MEAN	26.4			0.8	691.0			8.3	2.3	2.2	0.1	6.0	6.1				1	19.0														
TA3-PZ-09-07	STD. DEV.	0.5			0.2	287.1			3.2	0.1	0.1	0.0	3.1	3.1					4.2														
		26.0			0.6	488.0			6.0	2.2	2.1	0.1	3.8	3.9					16.0														
	MAX	26.7	6.6		0.9	894.0			10.5	2.3	2.2	0.1	8.2	8.3					22.0														
			2		2	2			2	2	2	2	2	2					2														
	MEAN	26.6			0.6	238.5			7.3	1.4	1.3	0.0	5.9	5.9					6.5														
TA3-PZ-09-ST14		0.4			0.1	29.0			1.2	0.1	0.1		1.3	1.3					2.2														
		26.3			0.5	218.0			6.4	1.3	1.3	0.0	5.0	5.0					4.9														
	MAX	26.9	4.6		0.7	259.0			8.1	1.4	1.4	0.0	6.8	6.8					8.0														

	Chatistical	Tomn		Total	DO	Specific	TSS	CBOD₅	COD	TN	TKN	Organic N	NH ₃ -N	NOx	TIN	ТР	Fecal	тос	DOC			Ani	ions						Cation	าร	•		Hydrogen	Sulfid T	Supralage
Sample ID	Statistical Parameter	(°C)	pН	Alkalinity	/ /1 \	Conductance						(mg/L N) ²																					Sulfide (Unionized	e TS	Sucralose (ug/L)
	rarameter			(mg/L)		(μο)	1 .		, , , ,								•	, , ,		F-		NO ₃ -N	NO ₂ -N	PO₄-P	SO ₄	В	Ca	Fe	Mg	Mn	K	Na	(OIIIOIIIZEU		
	n	2	2		2	2	-			2	2	2	2	2	2						2		<u> </u>				<u> </u>				-				+
TA 2 D7 00 CT1C		26.7			1.4	358.5	1		 	6.7	2.1	2.1	0.0	4.6	4.6						7.7						1				1				
TA3-PZ-09-ST16	STD. DEV.	0.6	F.C		0.2	64.3	-		 	0.8	0.8	0.8	0.0	1.6	1.6						2.8						<u> </u>				-				
		26.2 27.1	5.6		1.2	313.0 404.0	-			6.1 7.2	1.5	1.5 2.6	0.0	3.4 5.7	3.5 5.7						5.7 9.6		-				<u> </u>				-				
	MAX n	2	2	1	1.5 2	2			1	2	2.7	2.6	0.1	2	2	1					9.6														_
		26.5		2.0	2.2	322.0				9.4	1.1	1.1	0.0	8.3	8.3	0.0					16.5														
TA3-PZ-10-J5	STD. DEV.	0.6		2.0	0.2	19.8	1			1.6	0.1	0.1	0.0	1.8	1.8	0.0					2.1										1				+
173 12 10 13			4.3	2.0	2.1	308.0				8.2	1.0	1.0	0.0	7.0	7.0	0.0					15.0														
	-		5.1	2.0	2.3	336.0				10.5	1.2	1.2	0.0	9.5	9.5	0.0					18.0														_
	n	2	2	1	2	2			1	2	2	2	2	2	2	1					2														
	-	26.2		2.0	1.8	327.0				9.8	1.4	1.3	0.0	8.4	8.4	0.0					8.0														
TA3-PZ-10-K5	STD. DEV.	1.1		2.0	0.1	4.2				0.2	0.1	0.1	0.0	0.1	0.1	0.0					11.3														+
			4.4	2.0	1.8	324.0				9.6	1.3	1.3	0.0	8.3	8.3	0.0					0.1														
			5.0	2.0	1.9	330.0				9.9	1.4	1.4	0.0	8.5	8.5	0.0					16.0														
	n	2	2	1	2	2			1	2	2	2	2	2	2	1					2														
	MEAN	26.4		2.0	1.6	335.0			20.0	10.7	1.5	1.4	0.0	9.2	9.2	0.0					20.5														
TA3-PZ-10-L5	STD. DEV.	1.1			0.2	15.6				2.8	0.2	0.2	0.0	2.5	2.5						2.1														
	MIN	25.6	4.5	2.0	1.5	324.0			20.0	8.7	1.3	1.3	0.0	7.4	7.4	0.0					19.0														
	MAX	27.1	5.0	2.0	1.7	346.0			20.0	12.6	1.6	1.6	0.0	11.0	11.0	0.0					22.0														
	n	2	2	1	2	2			1	2	2	2	2	2	2	1		1	1	1	2	1	1	1	1	1	1	1	1	1	1	1			
	MEAN	26.6		2.0	3.7	287.0			10.0	11.3	1.3	1.3	0.0	10.0	10.0	0.0		0.8	0.6	0.0	17.0	9.3	9.9	0.0	48.0	0.1	24.0	0.0	6.5	0.1	9.5	8.7			
TA3-PZ-11-EF2	STD. DEV.	1.2			1.9	25.5				0.2	0.1	0.1	0.0	0.1	0.1						7.1														
			4.9	2.0	2.4	269.0				11.1	1.2	1.2	0.0	9.9	9.9	0.0		0.8	0.6	0.0		9.3				0.1		0.0	6.5	_	9.5	8.7			
	MAX		5.3	2.0	5.0	305.0				11.4	1.4	1.4	0.0	10.0	10.0	0.0		0.8	0.6	0.0	22.0	9.3	9.9	0.0	48.0	0.1	24.0	0.0	6.5	0.1	9.5				
	n	2	2	1	2	2			1	2	2	2	2	2	2	1		1	1	1	2	1	ļ	1	1	1	1	1	1	1	1	1			4
		26.6		2.0	2.1	371.0	-			15.8	1.3	1.3	0.0	14.5	14.5	0.1		1.5	1.4	0.1	30.5	13.0	<u> </u>	0.0	56.0	0.1	26.0	0.0	8.6	0.1	8.4	23.0			+
TA3-PZ-11-I2	STD. DEV.	1.6	4.5	2.0	1.3	15.6				0.6	0.1	0.2	0.0	0.7	0.7	0.4		4.5		0.4	0.7	42.0	1	0.0	50.0	0.4	26.0	0.0	0.6	0.4	0.4	22.0			4
			4.5	2.0	1.1	360.0				15.4	1.2	1.2	0.0	14.0	14.0	0.1		1.5	1.4	0.1	_	13.0	1	0.0		0.1		0.0				23.0			4
	1 1	_	5.0	2.0	3.0	382.0				16.2	1.4	1.4	0.0	15.0	15.0	0.1		1.5 1	1.4	0.1	31.0	13.0		0.0	56.0	0.1	26.0	0.0	8.6	0.1		23.0			_
	n MEAN	26.9	2	2.0	2.1	2 350.0	1		10.0	2 13.6	2 1.7	2 1.6	0.1	12.0	12.0	0.1		1.5	1	0.1	30.0	13.0		0.0	1	0.1	36.0	0.0	8.6	0.1	8.4	23.0			+
TA3-PZ-11-L2	MEAN STD. DEV.	1.2		2.0	1.4	14.1	1			2.5	0.4	0.3	0.1	2.9	2.8	0.1		1.5	1.4	0.1	30.0	13.0		0.0	50.0	0.1	20.0	0.0	8.0	0.1	8.4	23.0			-
173121112		26.0	4.4	2.0	1.1	340.0	1			11.8	1.4	1.4	0.0	9.9	10.0	0.1		1.5	1.4	0.1	30.0	13.0		0.0	56.0	0.1	26.0	0.0	8.6	0.1	8.4	23.0			+
		27.7	4.5	2.0	3.1	360.0				15.4	1.9	1.8	0.1	14.0	14.0	0.1		1.5	1.4	0.1	30.0	13.0		0.0		0.1		0.0				23.0			+
	n	2	2	1	2	2			1	2	2	2	2	2	2	1		1.3	1.7	0.1	2	13.0		0.0	30.0	0.1	20.0	0.0	0.0	0.1	0.4	23.0			
	-	26.4		2.0	2.0	316.0				9.7	1.2	1.2	0.0	8.5	8.5	0.2					21.5														
TA3-PZ-11-L3	STD. DEV.	1.5			0.9	52.3			1	5.2	0.1	0.1		5.0	5.0						3.5														
			4.3	2.0	1.3	279.0				6.0	1.1	1.1	0.0	4.9	4.9	0.2					19.0														
	MAX	-	4.3	2.0	2.6	353.0			10.0	13.3	1.3	1.3	0.0	12.0	12.0	0.2					24.0														
	n	2	2	1	2	2			1	2	2	2	2	2	2	1					2														
	MEAN	26.6		2.0	2.3	319.5			17.0	9.9	1.3	1.2	0.0	8.7	8.7	0.1					21.0														
TA3-PZ-11-L4	STD. DEV.	0.9			0.0	51.6				3.1	0.2	0.2		3.3	3.3						2.8														
	MIN	25.9	4.4	2.0	2.3	283.0			17.0	7.7	1.1	1.1	0.0	6.3	6.3	0.1					19.0														
	MAX	27.2	5.1	2.0	2.3	356.0			17.0	12.1	1.4	1.4	0.0	11.0	11.0	0.1					23.0														
		2	2		2	2				2	2	2	2	2	2						2														
		25.4			0.3	287.5				6.2	1.6	1.5	0.0	4.6	4.6						8.6														
TA3-PZ-16-I7		0.4			0.2	9.2				1.3	0.5	0.5	0.0	0.8	0.8						0.5														
		25.1			0.1	281.0				5.2	1.2	1.2	0.0	4.0	4.1						8.2														
	MAX	25.7	6.1		0.4	294.0				7.1	1.9	1.9	0.1	5.2	5.2						8.9														

		_		Total		Specific	T-00	2000 000		-1/A1		T		TINI				- L		Aı	nions						Cation	s			Hydrogen	0 15 1		<u> </u>
Sample ID	Statistical Parameter	(00)	рН	Alkalinity	DO (mg/L)	Conductance (µS)		CBOD ₅ CO (mg/L) (mg/		TKN (mg/L N)	Organic N (mg/L N) ²		NOx (mg/L N)	TIN (mg/L N) ³	TP (mg/L)	Fecal (Ct/100 mL)		OC g/L)	F- CI	l- NOs-I	N NO₂-N	PO.P	SO.	В	Ca	Fe	Mg	Mn	к	Na	Sulfide (Unionized	Sulfid e	TS	Sucralose (ug/L)
	n	2	2	,	2	2			2	2	2	2	2	2					2		110211	1 04-1	004		- Ou		9		- "	ING	,			
	MEAN	25.8			0.3	285.0			7.2	1.5	1.5	0.0	5.7	5.7					9.9															
TA3-PZ-16-M9	STD. DEV.	0.9			0.1	1.4			0.3	0.1	0.1		0.4	0.4																				
	MIN	25.1	5.4		0.2	284.0			7.0	1.4	1.4	0.0	5.4	5.4					9.9	9														
	MAX				0.3	286.0			7.4	1.6	1.6	0.0	6.0	6.0					9.9															
	n	2	2		2	2			2	2	2	2	2	2					2															
	MEAN	25.5			0.3	307.0			10.8	1.2	1.2	0.0	9.6	9.6					16.	.5														
TA3-PZ-16-N3	STD. DEV.	0.8			0.1	2.8			2.3	0.3	0.3		2.0	2.0					0.7	7														
	MIN	24.9	5.5		0.2	305.0			9.2	1.0	1.0	0.0	8.2	8.2					16.	.0														
	MAX	26.0	5.5		0.3	309.0			12.4	1.4	1.4	0.0	11.0	11.0					17.	.0														
	n	2	2		2	2			2	2	2	2	2	2					2															
	MEAN	25.5			0.3	296.0			7.7	1.5	1.5	0.0	6.2	6.2					11.	.5														i .
TA3-PZ-16-07	STD. DEV.	0.4			0.3	7.1			2.0	0.7	0.7	0.0	2.7	2.7					2.1	1														
	MIN	25.2	5.3		0.1	291.0			6.3	1.0	1.0	0.0	4.3	4.3					10.	.0														
	MAX	25.8	5.7		0.5	301.0			9.1	2.0	2.0	0.0	8.1	8.1					13.	.0														Ĺ
	n	2	2		2	2			2	2	2	2	2	2					2															
	MEAN	25.5			0.4	270.5			6.3	1.2	1.2	0.0	5.1	5.1					8.7	7														
TA3-PZ-16-ST14	STD. DEV.	0.6			0.1	3.5			2.1				2.1	2.1					0.7	7														
	MIN	25.1			0.3	268.0			4.8	1.2	1.2	0.0	3.6	3.6					8.2	2														
	MAX	25.9	5.3		0.4	273.0			7.8	1.2	1.2	0.0	6.6	6.6					9.2	2														
	n	2	2		2	2			2	2	2	2	2	2					2															L
	MEAN	25.5			0.3	267.5			5.9	0.9	0.9	0.0	5.1	5.1					8.4	4														
TA3-PZ-16-ST16	STD. DEV.	0.6			0.1	7.8			0.8	0.3	0.3	0.0	1.1	1.1					0.4															L
	MIN	25.1			0.2	262.0			5.4	0.7	0.7	0.0	4.3	4.3					8.1															
	MAX	25.9	5.4		0.4	273.0			6.5	1.1	1.1	0.0	5.8	5.8					8.6															
	n	2	2		2	2			2	2	2	2	2	2					2													1		
	MEAN	26.8			1.1	326.0			6.8	2.0	1.9	0.1	4.9	4.9					12.								ļ					6.8		
TA4-PZ-09-17	STD. DEV.	1.3							5.0	2.0	1.9	0.1	3.0	3.2					2.8															
	MIN	25.8			1.1	326.0			3.3	0.6	0.6	0.0	2.7	2.7					10.													6.8		
	MAX		5.9		1.1	326.0			10.4	3.4	3.2	0.2	7.0	7.2					14.													6.8		
	n	2	2		2	2	1		2	2	2	2	2	2					2								<u> </u>					1		
		26.7			1.3	479.5	ļ		8.1	2.5	2.4	0.1	5.7	5.7					11.				ļ	.			ļ					5.2		
TA4-PZ-09-L8	STD. DEV.	1.3			0.8	164.8	-	.	3.3	0.2	0.1	0.1	3.5	3.4					1.4								<u> </u>							
	MIN	25.7			0.7	363.0	-	.	5.8	2.3	2.2	0.1	3.2	3.3					10.		-	-	<u> </u>			-	ļ					5.2		
	MAX	27.6			1.8	596.0	-	-	10.4	2.6	2.5	0.1	8.1	8.2					12.		-	-				-						5.2		<u> </u>
	n	2	2		2	2	1		2	2	2	2	2	2					2								<u> </u>							
TA 4 D7 00 N44	MEAN	26.2			0.5	594.0			9.8	1.6	1.5	0.0	8.3	8.3					20.	_														
TA4-PZ-09-M4	STD. DEV.	0.8	6.6		0.2	59.4		-	5.2	0.1	0.0	0.1	5.3	5.3					7.8															—
	MIN	25.6			0.3	552.0			6.1	1.5	1.5	0.0	4.5	4.6					15.															
	MAX				0.6	636.0			13.5	1.6	1.5	0.1	12.0	12.0					26.															—
	n	2	2		2	2	1		2	2	2	2	2	2					2		+	-	<u> </u>									1		
TA4-PZ-09-N7	MEAN STD. DEV.				1.2 0.2	340.5 33.2	1	+ +	9.7 3.8	3.2	3.1 1.3	0.1	6.6 2.5	6.7 2.5			 	+	14. 2.1		+	+	 			+	-	1	-			2.2		
1A4-FZ-U9-IN/		25.7	E 6		1.0	33.2 317.0	1	+ +		1.3 2.2	2.1	0.1		4.9			 	+	13.		+	+	 			+	-	1	-			2.2		
	MIN MAX					317.0 364.0	1		7.0		4.0	0.1	4.8	8.4			 		13. 16.			1	}			1	1	1	1		1	2.2		
		27.4			1.3	364.0			12.4	4.1	4.0	0.1	8.3 2	2					2															
	n MEAN		2		0.6	177.5			4.8	1.2	1.1	2	3.7	3.7					4.7													0.9		
TA4-PZ-09-TU14	STD. DEV.				0.6	26.2						0.1	0.4						0.6													0.9		
184-72-09-1014		25.5	17		0.2	26.2 159.0			0.3 4.6	0.1	0.0	0.0	3.4	0.3 3.5					4.2													0.9		
	MIN								_	1.1	1.1								5.1													0.9		
	IVIAX	27.6	5.4		0.7	196.0			5.0	1.2	1.1	0.1	3.9	3.9					5.1	T												0.9		

		_		Total		Specific	 													Anior	ıs					Cation	ıs			Hydrogen		
Sample ID	Statistical Parameter	Temp (°C)	pН	Alkalinity (mg/L)	DO (mg/L)	Conductance (µS)	CBOD ₅ COD (mg/L) (mg/L)	TN (mg/L N) ¹	TKN (mg/L N)	Organic N (mg/L N) ²		NOx (mg/L N)	TIN (mg/L N) ³	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	F.	CI ⁻	NO ₃ -N ⁻ N	O ₂ -N ⁻ PO ₄	-P' SO₄	- в	Ca	Fe	Mg	Mn	к	Na	Sulfide (Unionized	Sulfid	TS Sucral (ug/l
	n	2	2		2	2		2	2	2	2	2	2						2							Ť				`	1	
	MEAN	26.5			0.8	235.5		8.4	3.1	3.0	0.0	5.4	5.4						4.9													
TA4-PZ-09-TU16	STD. DEV.	1.4				50.2		1.0	1.5	1.4	0.1	0.5	0.4						1.3													
	MIN	25.5	5.0		0.8	200.0		7.7	2.0	2.0	0.0	5.0	5.1						4.0												0.1	
	MAX	27.5			0.8	271.0		9.1	4.1	4.0	0.1	5.7	5.7						5.8												0.1	
	n	2	2	1	2	2	1	2	2	2	2	2	2	1					2												1	
	MEAN	26.9		2.0	1.6	281.0	11.0	10.5	1.9	1.9	0.0	8.6	8.6	0.1					17.4												1.7	
TA4-PZ-10-H5	STD. DEV.	0.5			0.3	65.1		0.1	0.8	0.8		0.9	0.9						10.8													
	MIN	26.5	4.3	2.0	1.4	235.0	11.0	10.4	1.3	1.3	0.0	7.9	7.9	0.1					9.7												1.7	
	MAX	27.2	5.5	2.0	1.8	327.0	11.0	10.5	2.5	2.5	0.0	9.2	9.2	0.1					25.0												1.7	
	n	2	2	1	2	2	1	2	2	2	2	2	2	1					2												1	
	MEAN	26.7		2.0	2.3	358.0	10.0	14.0	2.5	2.4	0.0	11.5	11.5	0.1					23.0												0.9	
TA4-PZ-10-J5	STD. DEV.	0.7			0.2	33.9		1.2	0.5	0.5	0.0	0.7	0.7																			
	MIN	26.2	4.3	2.0	2.1	334.0	10.0	13.1	2.1	2.1	0.0	11.0	11.0	0.1					23.0												0.9	
	MAX	27.2	5.6	2.0	2.4	382.0	10.0	14.8	2.8	2.7	0.1	12.0	12.1	0.1					23.0												0.9	
	n	2	2	1	2	2	1	2	2	2	2	2	2	1		1	1	1	2	1	1	1	1	1	1	1	1	1	1		1	
	MEAN	26.7		2.0	2.2	391.5	10.0	17.8	1.3	1.2	0.1	16.5	16.6	0.2		1.8	1.2	0.2	32.0	15.0	0.0) 56.0	0.1	31.0	0.0	7.5	0.0	5.1	22.0		21.0	
TA4-PZ-10-K5	STD. DEV.	0.6			0.7	3.5		0.3	0.4	0.5	0.1	0.7	0.8						5.7													
	MIN	26.2	4.2	2.0	1.7	389.0	10.0	17.6	1.0	0.9	0.0	16.0	16.0	0.2		1.8	1.2	0.2	28.0	15.0	0.0) 56.0	0.1	31.0	0.0	7.5	0.0	5.1	22.0		21.0	
	MAX	27.1	5.3	2.0	2.7	394.0	10.0	18.0	1.6	1.6	0.1	17.0	17.1	0.2		1.8	1.2	0.2	36.0	15.0	0.0) 56.0	0.1	31.0	0.0	7.5	0.0	5.1	22.0		21.0	
	n	2	2	1	2	2	1	2	2	2	2	2	2	1					2												1	
	MEAN	26.9		2.0	1.6	259.5	11.0	10.1	1.4	1.3	0.0	8.8	8.8	0.0					16.9												0.1	
TA4-PZ-11-EF2	STD. DEV.	1.3			0.1	102.5		4.9	0.4	0.4		4.6	4.6						14.3													
	MIN	26.0	4.2	2.0	1.5	187.0	11.0	6.6	1.1	1.1	0.0	5.5	5.5	0.0					6.8												0.1	
	MAX	27.8	4.2	2.0	1.6	332.0	11.0	13.6	1.6	1.6	0.0	12.0	12.0	0.0					27.0												0.1	
	n	2	2	1	2	2	1	2	2	2	2	2	2	1		1	1	1	2	1	1	1	1	1	1	1	1	1	1			1
	MEAN	27.6		2.0	2.0	348.5	10.0	18.3	1.8	1.7	0.0	16.5	16.5	0.0		2.1	1.7	0.1	23.0	9.4	0.0	60.0	0.1	29.0	0.0	5.6	0.1	6.2	9.3			0.5
TA4-PZ-11-L2	STD. DEV.	2.1			0.4	94.0		9.4	0.2	0.2	0.0	9.2	9.2						12.7													
	MIN	26.1	4.5	2.0	1.7	282.0	10.0	11.6	1.6	1.6	0.0	10.0	10.0	0.0		2.1	1.7	0.1	14.0	9.4	0.0	60.0	0.1	29.0	0.0	5.6	0.1	6.2	9.3			0.5
	MAX	29.1	4.7	2.0	2.3	415.0	10.0	24.9	1.9	1.9	0.0	23.0	23.0	0.0		2.1	1.7	0.1	32.0	9.4	0.0	60.0	0.1	29.0	0.0	5.6	0.1	6.2	9.3			0.5
	n	2	2	1	2	2	1	2	2	2	2	2	2	1					2													
	MEAN	26.3		2.0	1.3	295.5	17.0	12.2	1.4	1.4	0.0	10.8	10.8	0.0					21.0													
TA4-PZ-11-L3	STD. DEV.	0.7			0.2	65.8		4.9	0.3	0.2	0.0	4.6	4.6						4.2													
	MIN	25.8	4.2	2.0	1.1	249.0	17.0	8.7	1.2	1.2	0.0	7.5	7.5	0.0					18.0													
	MAX	26.8	4.3	2.0	1.4	342.0	17.0	15.6	1.6	1.5	0.1	14.0	14.1	0.0					24.0													
	n	2	2	1	2	2	1	2	2	2	2	2	2	1		1	1	1	2	1	1	1	1	1	1	1	1	1	1			
	MEAN	26.4		2.0	1.8	379.5	10.0	18.0	2.0	2.0	0.0	16.0	16.0	0.0		1.0	0.9	0.2	31.5	12.0	0.0	52.0	0.1	27.0	0.0	6.6	0.0	5.3	20.0			
TA4-PZ-11-L4	STD. DEV.	0.6			0.3	57.3		4.5	0.3	0.2	0.0	4.2	4.3						0.7													
	MIN	26.0	4.2	2.0	1.6	339.0	10.0	14.8	1.8	1.8	0.0	13.0	13.0	0.0		1.0	0.9	0.2	31.0	12.0	0.0		0.1	27.0	0.0	6.6	0.0	5.3	20.0			
	MAX	26.8	4.3	2.0	2.0	420.0	10.0	21.2	2.2	2.1	0.1	19.0	19.1	0.0		1.0	0.9	0.2	32.0	12.0	0.0	52.0	0.1	27.0	0.0	6.6	0.0	5.3	20.0			
	n	2	2	1	2	2	1	2	2	2	2	2	2	1					2													
	MEAN	26.4		2.0	1.7	404.0	11.0	19.4	2.4	2.3	0.0	17.0	17.0	0.1					33.0													
TA4-PZ-11-L5	STD. DEV.	0.7			0.3	21.2		0.4	1.1	1.1		1.4	1.4						4.2													
	MIN	25.9	4.2	2.0	1.5	389.0	11.0	19.1	1.6	1.6	0.0	16.0	16.0	0.1					30.0													
	MAX	26.9	5.2	2.0	1.9	419.0	11.0	19.6	3.1	3.1	0.0	18.0	18.0	0.1					36.0						1							

		_ [Total	T	Specific	7-00	0000		TNI	T (A)							T	T_000			Anio	ons					С	ations				Hydrogen			
Sample ID	Statistical Parameter	(°C)	рН	Alkalinity	y DO	Conductan	<u>, 133</u>	CBOE		TN (mg/L N) ¹		Organic N (mg/L N) ²		NOx (mg/LN)	TIN (mg/L N) ³	TP (mg/L)	Fecal (Ct/100 ml.)	TOC															Sulfide	Sulfid e	TS	Sucralose (ug/L)
	Parameter	(0)		(mg/L)	(ilig/L	-) (μS)	(ilig/L)	, (ilig/L	.) (iiig/L)	(IIIg/L IV)	(IIIg/L IV)	(IIIg/L N)	(IIIg/L IV)	(IIIg/L IV)	(IIIg/L IV)	(IIIg/L)	(00 100 1112)	(IIIg/L)	, (iiig/L)	F ⁻	CI-	NO ₃ -N-1	NO ₂ -N	PO₄-P	SO ₄ -	В	Ca	Fe	Mg	Mn	K	Na	(Unionized	•		(ug/L)
	n	2	2	1	2	2			1	2	2	2	2	2	2	1					2															
	MEAN	26.6		2.0	1.7				10.0	15.9	1.4	1.3	0.0	14.5	14.5	0.1					29.5															
TA4-PZ-11-L6	STD. DEV.	0.8				126.6				1.1	0.4	0.4		0.7	0.7						7.8															
			4.3	2.0	1.7	368.0			10.0	15.1	1.1	1.1	0.0	14.0	14.0	0.1					24.0															
	MAX	27.1	5.2	2.0	1.7				10.0	16.6	1.6	1.6	0.0	15.0	15.0	0.1					35.0															
	n	2	2		2	2				2	2	2	2	2	2						2															
	MEAN	25.6			0.4	246.0				6.5	1.0	0.9	0.0	5.6	5.6						8.3															
TA4-PZ-16-I7	STD. DEV.	0.8			0.3					1.6	0.0	0.0	0.0	1.6	1.6						0.9															
			5.1		0.2	231.0				5.4	1.0	0.9	0.0	4.4	4.4						7.6															
	MAX	26.2	5.5		0.6					7.7	1.0	1.0	0.0	6.7	6.7						8.9															
	n	2	2		2	2				2	2	2	2	2	2						2															
	MEAN	25.8			0.5	247.5				7.9	1.4	1.4	0.0	6.5	6.5						8.7															
TA4-PZ-16-L8	STD. DEV.	0.9			0.4	23.3				1.1	0.4	0.4	0.0	1.6	1.5						0.6															
		25.1			0.2	_				7.1	1.1	1.1	0.0	5.4	5.5						8.3															
	MAX	26.4			0.7					8.7	1.7	1.6	0.1	7.6	7.6						9.1															
	n	2	2		2	-		<u> </u>		2	2	2	2	2	2						2															
	MEAN	25.3			0.3	228.5				8.4	1.9	1.8	0.0	6.5	6.5						9.1															
TA4-PZ-16-M4	STD. DEV.	0.7			0.1					0.4	0.4	0.4									1.2															
		24.8			0.2	-				8.1	1.6	1.6	0.0	6.5	6.5						8.2															
	MAX	25.8	5.3		0.3	232.0				8.6	2.1	2.1	0.0	6.5	6.5						9.9															
	n	2	2		2	2				2	2	2	2	2	2						2															
	MEAN	25.7			0.3	_				9.4	1.0	0.9	0.0	8.5	8.5						10.7															
TA4-PZ-16-N7	STD. DEV.	0.8			0.2	10.6				0.3	0.4	0.3	0.0	0.1	0.1						1.9															
		25.1			0.1	237.0				9.2	0.7	0.7	0.0	8.4	8.4						9.3															
	MAX	26.2	5.2		0.4	252.0				9.6	1.2	1.2	0.0	8.5	8.5					1	12.0															
	n	2	2		2	2				2	2	2	2	2	2						2															
	MEAN	25.7			0.2			<u> </u>		3.1	0.8	0.8	0.0	2.3	2.3						5.4															
TA4-PZ-16-TU14	STD. DEV.	1.1			0.1	_				1.4	0.2	0.2	0.0	1.1	1.1						1.1															
			5.2		0.1	226.0				2.1	0.6	0.6	0.0	1.5	1.5						4.6															
	MAX	26.5			0.3					4.0	0.9	0.9	0.0	3.1	3.1						6.2															
	n	2	2		2	2				2	2	2	2	2	2						2															
	MEAN	25.5			0.3					4.3	0.9	0.9	0.0	3.4	3.4						5.4															
TA4-PZ-16-TU16	STD. DEV.	1.2			0.1	14.1				1.6	0.4	0.4	0.0	1.2	1.2						0.4															
		24.6			0.2					3.2	0.7	0.6	0.0	2.5	2.5						5.1															
	MAX	26.3	5.3		0.3	257.0				5.4	1.2	1.2	0.0	4.2	4.2						5.7															
	n	2	2		2	2				2	2	2	2	2	2						2															
	MEAN	28.6			2.6					0.2	0.2	0.2	0.0	0.0	0.0						4.7															
PZ01-BKG-09	STD. DEV.	0.1			2.5					0.2	0.2	0.2		0.0	0.0						0.4															
			4.3		0.8					0.1	0.1	0.1	0.0	0.0	0.0						4.4															
		28.7			4.3					0.4	0.4	0.3	0.0	0.0	0.0						4.9															
		2	2		2	_				2	2	2	2	2	2					_	2															
		26.9			4.5					9.9	1.9	1.9	0.0	8.0	8.0						4.1															
PZ04-BKG-09		1.0			0.1					3.7	0.8	0.8	0.0	2.9	2.9						2.7															
		26.2			4.4					7.2	1.3	1.3	0.0	5.9	5.9						2.2															
	MAX	27.6			4.5					12.5	2.5	2.5	0.0	10.0	10.0						6.0															
	n	2	2	1	2			ļ	1	2	2	2	2	2	2	1		<u> </u>			2															
	MEAN	25.6		4.2	2.2	_			10.0	14.0	2.0	1.9	0.0	12.0	12.0	0.7					17.0															
PZ24-BKG-26	STD. DEV.	0.4			0.4					0.1	0.1	0.1	0.0		0.0																					
		25.3			1.9				10.0	13.9	1.9	1.9	0.0	12.0	12.0	0.7					17.0															
	MAX	25.8	5.0	4.2	2.4	294.0			10.0	14.0	2.0	2.0	0.0	12.0	12.0	0.7				1	17.0															

	6	-		Total		Specific	T-00	opop	000	TNI	TION	Ormania N		Non	TIM		FI	T00				Anio	ns					(Cations	S			Hydrogen	0.454	Τ,	0
Sample ID	Statistical	(°C)	рΗ	Alkalinity	DO (mg/L)	Conductance		CBOD ₅		TN (mg/L N) ¹	TKN (mg/L N)	Organic N (mg/L N) ²	NH ₃ -N	NOx (mg/L N	TIN \ma/L N\\3	TP (mg/L)	Fecal	TOC															Sulfide	Sulfid e	TS	Sucratose (ug/L)
	Parameter	(0)		(mg/L)	(IIIg/L)	(μS)	(ilig/L)	(IIIg/L)	(IIIg/L)	(IIIg/L IV)	(IIIg/L IV)	(IIIg/L IV)	(IIIg/L IV)	(IIIg/L IV)	(IIIg/L N)	(IIIg/L)	(00 100 1112)	(ilig/L)	(IIIg/L)	F-	CI-	NO ₃ -N-	NO ₂ -N	PO₄-P⁻	SO ₄	В	Ca	Fe	Mg	Mn	K	Na	(Unionized	•		(ug/L)
	n	2	2	2	2	2			1	2	2	2	2	2	2	1					2															1
	MEAN	28.2		2.7	1.7	212.5			10.0	5.3	1.4	1.4	0.0	3.9	3.9	0.1					7.1															0.0
PZ29-BKG09	STD. DEV.	2.3		0.8	0.1	2.1				1.1	0.7	0.7		0.4	0.4						0.9															
			4.9	2.1	1.6	211.0			10.0	4.6	1.0	1.0	0.0	3.6	3.6	0.1					6.4															0.0
	MAX	29.8	5.5	3.2	1.7	214.0			10.0	6.1	1.9	1.9	0.0	4.2	4.2	0.1					7.7															0.0
	n	2	2	2	2	2			1	2	2	2	2	2	2	1					2															1
	MEAN	26.5		15.2	1.0	318.5			10.0	12.9	0.9	0.9	0.0	12.0	12.0	0.1					16.5															0.0
PZ30-BKG-16	STD. DEV.	0.3		9.6	0.8	19.1				0.1	0.1	0.1	0.0		0.0						0.7															
	-	26.3		8.4	0.4	305.0			10.0	12.9	0.9	0.8	0.0	12.0	12.0	0.1					16.0															0.0
			5.6	22.0	1.5	332.0			10.0	13.0	1.0	1.0	0.0	12.0	12.0	0.1					17.0														_	0.0
	n	2	2	2	2	2			1	2	2	2	2	2	2	1					2															1
D704 DWO 06		26.7		4.7	1.2	318.5	-		10.0	14.9	1.4	1.3	0.1	13.5	13.6	0.1					19.0										-					0.0
PZ31-BKG-26	STD. DEV.	0.1		0.7		3.5	-			0.7		0.1	0.1	0.7	0.6																				_	
			5.0	4.2	1.2	316.0			10.0	14.4	1.4	1.2	0.0	13.0	13.2	0.1		1	-		19.0															0.0
	1 1		5.1	5.2	1.2	321.0			10.0	15.4	1.4	1.4	0.2	14.0	14.0	0.1					19.0															0.0
	n	2	2	2	2	2	-		1	2	2	2	2	2	2	1					2										-					1
D722 BVC00		28.9		2.0	3.6	215.0	1		10.0	5.6	1.3	1.2	0.0	4.3	4.3	0.0					6.2										-				-	0.0
PZ32-BKG09	STD. DEV.	0.4 28.6	4.4	2.0	1.9 2.2	48.1	1		10.0	1.9	0.2	0.2	0.0	1.7	3.1	0.0					1.0 5.5										-				-	0.0
			4.4	2.0	4.9	181.0 249.0	1		10.0	4.2 6.9	1.1	1.1 1.4	0.0	3.1 5.5		0.0		1			6.9															0.0
	1	29.2	4.4 2	2.0	2	249.0				2	2		2	2	5.5						2															
	n MEAN	27.2	2	4.7	0.7	273.0			10.0	12.3	1.3	1.2	0.0	11.0	11.0	0.0		l			14.5	1														0.0
PZ33-BKG-16	STD. DEV.	0.3		0.7	0.7	4.2			10.0	0.2	0.2	0.3	0.0	11.0	0.1	0.0					0.7															0.0
1 233-DKG-10		-	4.9	4.2	0.4	270.0			10.0	12.1	1.1	1.0	0.1	11.0	11.0	0.0					14.0															0.0
			5.2	5.2	1.0	276.0	1		10.0	12.1	1.4	1.4	0.0	11.0	11.1	0.0		1			15.0	-														0.0
	n	2	2	2	2	2			1	2	2	2	2	2	2	1					2															1
		26.5		12.2	1.5	324.5			10.0	9.2	1.6	1.5	0.1	7.6	7.7	0.4		1			21.0															0.0
PZ34-BKG-26	STD. DEV.	0.1		8.3	0.4	9.2			10.0	1.1	0.3	0.4	0.1	1.4	1.5	0.1					1.4										1					
	-	26.4	5.2	6.3	1.2	318.0			10.0	8.4	1.4	1.2	0.1	6.6	6.7	0.4					20.0															0.0
	-		5.9	18.0	1.8	331.0			10.0	10.0	1.8	1.7	0.2	8.6	8.8	0.4					22.0															0.0
	n	2	2	2	2	2			20.0	2	2	2	2	2	2	0					2															0.0
	-	26.9		125.0	1.0	713.5				6.5	1.7	1.7	0.0	4.8	4.8						13.5															
PZ35-BKG09	STD. DEV.	0.1		7.1	0.9	211.4				1.3	0.1	0.1	0.0	1.2	1.2						4.9															
		26.8	6.0	120.0	0.3	564.0				5.5	1.6	1.6	0.0	3.9	3.9						10.0															
		26.9	6.6	130.0	1.6	863.0				7.4	1.8	1.8	0.0	5.6	5.6						17.0															
	n	2	2	2	2	2				2	2	2	2	2	2						2															
	MEAN	25.9		9.1	0.4	252.5				7.5	1.2	1.2	0.0	6.3	6.3						7.9															
PZ36-BKG-16	STD. DEV.	0.3		5.5		2.1				1.0	0.4	0.5	0.0	1.4	1.5						0.1															
	MIN	25.7	5.3	5.2	0.4	251.0				6.8	0.9	0.9	0.0	5.3	5.3						7.8															
	MAX	26.1	5.4	13.0	0.4	254.0				8.2	1.5	1.5	0.1	7.3	7.4						8.0															
	n	1	2	2	2	2			1	2	2	2	2	2	2	1					2															
	MEAN	25.4		5.3	1.1	317.5			10.0	15.3	1.3	1.2	0.0	14.0	14.0	1.7					18.0															
PZ37-BKG-26	STD. DEV.			1.5	0.9	21.9				1.6	0.2	0.2	0.0	1.4	1.4						2.8															
		25.4		4.2	0.4	302.0			10.0	14.1	1.1	1.1	0.0	13.0	13.0	1.7					16.0															
	MAX	25.4	5.2	6.3	1.7	333.0			10.0	16.4	1.4	1.4	0.0	15.0	15.0	1.7					20.0															
	n	2	2	2	2	2				2	2	2	2	2	2						2															
		25.9		48.5	0.3	399.0				1.3	0.5	0.4	0.0	0.9	0.9						8.1															
PZ38-BKG09		1.0		37.5	0.1	216.4				0.2	0.1	0.1	0.0	0.2	0.2						2.7															
		25.2		22.0	0.2	246.0				1.2	0.4	0.4	0.0	0.8	0.8						6.2															
	MAX	26.6	6.2	75.0	0.4	552.0	<u> </u>	<u> </u>		1.5	0.5	0.5	0.0	1.0	1.0			<u> </u>	<u> </u>		10.0															

	Chatiatian			Total		Specific	T00	opop.		TNI	TION	Ormania N		NO.	TIN	TD	Famil	тоо	DOG		An	ions					Ca	tions	5			Hydrogen	0.15.1		0
Sample ID	Statistical Parameter	(00)	pН	Alkalinity	DO (mg/L)	Conductance		CBOD ₅		TN (mg/L N) ¹	TKN (ma/L N)	Organic N (mg/L N) ²		NOx (mg/L N)	(mg/L N) ³	TP (ma/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)													Sulfide	Sulfid e	TS	Sucralose (ug/L)
	Parameter	(0)		(mg/L)	(g, =)	(µS)	(9, _,	(IIIg/L)	(g, _,	(IIIg/L II)	(g,,	(ilig/L it)	(mg/L it)	(g/)	(9, = 14)	(g, _,	(00 100 1112)	(g, _,	(9, =)	F CI	NO ₃ -N	NO ₂ -N	PO ₄ -P	SO ₄ -	В	a	Fe	Mg	Mn	K	Na	(Unionized	Ů		(49,2)
	n	2	2	2	2	2				2	2	2	2	2	2					2															
	MEAN	25.3		43.0	0.3	288.5				4.4	1.2	1.1	0.0	3.2	3.2					6.8	_														
PZ39-BKG-16	STD. DEV.	0.9		15.6	0.1	72.8				0.1	0.1	0.1	0.0	0.1	0.1					0.4															
	MIN	24.6		32.0	0.2	237.0				4.3	1.1	1.1	0.0	3.1	3.1					6.5	_														
	MAX	25.9	6.2	54.0	0.4	340.0				4.4	1.2	1.2	0.0	3.3	3.3					7.0	_														<u> </u>
	n	2	2	2	2	2				2	2	2	2	2	2					2	_														ļ
	MEAN	25.0		4.7	1.1	287.5				9.3	0.9	0.9	0.0	8.4	8.4					15.0)														ļ
PZ40-BKG-26	STD. DEV.	0.1		0.7	1.1	12.0				1.9	0.2	0.2	0.0	1.7	1.7																				ļ
	MIN	24.9		4.2	0.3	279.0				8.0	0.8	0.8	0.0	7.2	7.2					15.0	_														
	MAX	25.0	5.2	5.2	1.9	296.0				10.7	1.1	1.1	0.0	9.6	9.6					15.)														
PNRS II samples		1				,					ı				1																1	1			1
	n	1	2	1	2	2	1	1	1	2	2	2	2	2	2	1	1			1				1								1			
	MEAN	28.4		230.0	0.1	944.5	4.0	2.0	120.0	2.3	2.3	2.0	0.3	0.0	0.3	3.5				48.)		1	L40.0								3.3			
TA5-Denite Tank	STD. DEV.					50.2				0.3	0.4	0.7	0.3	0.0	0.3																				
	MIN	28.4	6.5	230.0	0.1	909.0	4.0		120.0	2.0	2.0	1.5	0.1	0.0	0.1	3.5	200.0			48.	_			L40.0								3.3			
	MAX		7.0	230.0	0.1	980.0	4.0	2.0	120.0	2.5	2.5	2.5	0.5	0.0	0.5	3.5	200.0			48.			1	L40.0								3.3			
	n	3	3	1	3	3	1	1	2	3	3	3	3	3	3	2				2	1	1		1								1			
	MEAN	30.4		240.0	3.5	840.7	6.0	2.0	135.0	6.3	3.7	3.5	0.2	2.6	2.8	3.6				52.	5 0.2	0.2		35.0								0.7			
TA5-LINER-SP	STD. DEV.	3.1			1.0	74.9			21.2	5.1	2.3	2.2	0.2	2.9	3.1	3.6				4.9	١														
	MIN	27.0	6.4	240.0	2.7	786.0	6.0	2.0	120.0	1.4	1.1	1.1	0.0	0.3	0.3	1.0				49.	0.2	0.2		35.0								0.7			
	MAX	33.2	6.6	240.0	4.6	926.0	6.0	2.0	150.0	11.6	5.7	5.3	0.4	5.9	6.3	6.1				56.	0.2	0.2		35.0								0.7			
	n	2	2	1	2	2		1	1	2	2	2	2	2	2	1	1			2	1	1		1								1			
	MEAN	32.0		75.0	6.2	766.5		2.0	76.0	31.7	2.7	2.6	0.0	29.0	29.0	4.1				60.	35.0	0.0		50.0								1.8			
TA5-LY-C	STD. DEV.	4.7			0.4	160.5				7.7	0.8	0.8		8.5	8.5					2.8	1														
	MIN	28.6	6.4	75.0	5.9	653.0		2.0	76.0	26.2	2.1	2.1	0.0	23.0	23.0	4.1	1.0			58.0	35.0	0.0		50.0								1.8			
	MAX	35.3	6.6	75.0	6.4	880.0		2.0	76.0	37.1	3.2	3.2	0.0	35.0	35.0	4.1	1.0			62.0	35.0	0.0		50.0								1.8			
	n	2	2	1	2	2	1	1	1	2	2	2	2	2	2	1	1			1				1								1			1
	MEAN	26.6		2.1	1.2	330.5	1.0	2.0	11.0	12.4	1.8	1.7	0.0	10.7	10.7	0.0				15.0)			74.0								0.0			5.1
TA5-PZ-I	STD. DEV.	0.2			0.1	26.2				7.5	0.1	0.1	0.0	7.6	7.6																				
	MIN	26.4	4.2	2.1	1.1	312.0	1.0	2.0	11.0	7.1	1.7	1.7	0.0	5.3	5.3	0.0	1.0			15.0)			74.0								0.0			5.1
	MAX	26.7	4.7	2.1	1.3	349.0	1.0	2.0	11.0	17.7	1.8	1.8	0.0	16.0	16.0	0.0	1.0			15.0)			74.0								0.0			5.1
	n	2	2	1	2	2	1	1	1	2	2	2	2	2	2	1	1			2				2								1	1		
	MEAN	27.5		170.0	0.4	967.5	2.0	2.0	120.0	3.4	3.3	2.9	0.4	0.1	0.4	5.9				65.	5		1	15.0								1.0	1.7		
TA6-Denite Tank	STD. DEV.	0.8			0.4	161.9				1.0	1.0	1.3	0.3		0.3					10.	_			7.1											
	MIN	26.9	6.6	170.0	0.1	853.0	2.0	2.0	120.0	2.7	2.6	2.0	0.1	0.1	0.2	5.9	180.0			58.0				10.0								1.0	1.7		
	MAX	28.0	6.8	170.0	0.7	1082.0	2.0		120.0	4.1	4.0	3.9	0.6	0.1	0.7	5.9	180.0			73.0	_			20.0								1.0	1.7		
	n	2	2	1	2	2	1	1	1	2	2	2	2	2	2	1	1			2		1		1								1			
	MEAN	27.4		230.0	4.6	890.0	2.0	2.0	130.0	5.9	4.4	4.0	0.4	1.5	1.8	3.6				57.		0.0		35.0								0.7			
TA6-LINER-SP	STD. DEV.				2.2	241.8				4.6	2.7	2.4	0.3	1.9	2.2					12.0	_	-													
	MIN		6.4	230.0	3.0	719.0	2.0	2.0	130.0		2.5	2.4	0.1	0.1	0.2	3.6	1.0				0.1	0.0		35.0								0.7			1
	MAX	27.8	6.6	230.0	6.1	1061.0		2.0	130.0	9.1	6.3	5.7	0.6	2.8	3.4	3.6	1.0				0.1			35.0								0.7			
	n	2		2	2	2	2.0	1	2	2	2	2	2	2	2	2	1				1			1								1	1		
	MEAN			125.0	5.9	658.5			65.5	13.0	2.1	2.1	0.0	10.9	10.9	1.0	_				5 19.0			40.0								18.0	21.0		
TA6-LY-C	STD. DEV.			21.2	0.8	183.1		2.0	27.6	11.8	0.3	0.3	0.0	11.5	11.5	1.3				14.		0.0		.0.0								10.0	21.0		
		27.8	6.2		5.3	529.0		2.0	46.0	4.6	1.9	1.9	0.0	2.7	2.7	0.1	1.0				0 19.0	0.0		40.0								18.0	21.0		
	MAX				6.4	788.0		2.0	85.0	21.3	2.3	2.3	0.0	19.0	19.0	1.9	1.0				0 19.0			40.0								18.0	21.0		
	n	2		140.0	2	2	1	1	1	21.3	2.3	2.3	2	2	2	1.9	1.0			2		0.0		1								18.0	21.0		1
	MEAN			9.4	3.0	345.5	2 0		29.0	18.7	1.7	1.6	0.0	17.0	17.0	0.0	1		-	16.0		1	 	76.0								0.0			0.0
TA6-PZ-I	STD. DEV.			5.4	1.4	40.3	2.0	2.0	23.0	4.3	0.1	0.1	0.0	4.2	4.2	0.0				5.7		+	 	70.0		-						0.0			0.0
170-1 2-1	MIN		10	9.4	2.0	317.0	2.0	2.0	29.0	15.6	1.6	1.6	0.0	14.0	14.0	0.0	1.0			12.0		1		76.0								0.0			0.0
	MAX			9.4	4.0	317.0		2.0			1.7	1.6	0.0	20.0	20.0	0.0	1.0			20.		+		76.0								0.0			0.0
	IVIAX	20.9	5.4	5.4	4.0	3/4.0	2.0	2.0	29.0	21./	1./	1./	0.0	20.0	20.0	0.0	1.0			20.0	J	<u> </u>		70.0							<u> </u>	0.0	ll		0.0

o:\44237-001\\\Wpdocs\Report\Draft

Table H.1 (continued) Statistical Water Quality Summary

				Total		Specific	l								l l				l			Ani	ons						Cations	s			Hydrogen		T
Sample ID	Statistical Parameter	Temp (°C)	рН	Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TSS (mg/L)	CBOD₅ (mg/L)	(mg/L)	TN (mg/L N) ¹	(mg/L N)	(mg/L N) ²	NH ₃ -N (mg/L N)	MOx (mg/L N)	TIN (mg/L N) ³	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	F-	CI-	NO ₃ -N	NO ₂ -N	PO ₄ -P	SO ₄ -	В	Ca	Fe	Mg	Mn	к	Na	Sulfide (Unionized	TS	Sucralose (ug/L)
Blanks																																			
	n	2	2	2	2	2			2	2	2	2	2	2	2			1	2	2	2	2		2	2	2	2	2	2	2	2	2			
	MEAN	24.0		2.0	3.6	4.5			10.0	0.1	0.1	0.0	0.0	0.0	0.0			0.5	0.9	0.0	0.1	0.0		0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1			
EB	STD. DEV.	0.7			0.2	3.5													0.5	0.0															
	MIN	23.5	6.8	2.0	3.4	2.0			10.0	0.1	0.1	0.0	0.0	0.0	0.0			0.5	0.5	0.0	0.1	0.0		0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1			
	MAX	24.5	8.0	2.0	3.7	7.0			10.0	0.1	0.1	0.0	0.0	0.0	0.0			0.5	1.2	0.1	0.1	0.0		0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1			
	n	2	2	2	2	2				2	2	2	2	2	2						2														
	MEAN	27.5		2.1	4.3	5.0				0.1	0.1	0.0	0.0	0.0	0.0						0.1														
FB-DI	STD. DEV.	4.2		0.1	0.8	4.2															0.1														
	MIN	24.5	6.8	2.0	3.7	2.0				0.1	0.1	0.0	0.0	0.0	0.0						0.1														
	MAX	30.5	7.6	2.1	4.8	8.0				0.1	0.1	0.0	0.0	0.0	0.0						0.2														
	n	2	2	2	2	2				2	2	2	2	2	2						2														
	MEAN	29.1		135.0	3.2	218.0				0.2	0.2	0.1	0.1	0.0	0.1						21.5													4	
FB-Tap	STD. DEV.	2.1		21.2	0.4	301.2				0.2	0.2	0.1	0.1		0.1						0.7													4	
	MIN	27.6	6.3	120.0	2.9	5.0				0.1	0.1	0.0	0.0	0.0	0.0						21.0														
	MAX	30.5	7.2	150.0	3.5	431.0				0.3	0.3	0.1	0.2	0.0	0.2						22.0														

Notes:

¹Total Nitrogen (TN) is a calculated value equal to the sum of TKN and NO_{X.}

²Organic Nitrogen (ON) is a calculated value equal to the difference of TKN and NH_{3.}

 3 Total Inorganic Nitrogen (TIN) is a calculated value equal to the sum of NH $_3$ and NO $_\chi$.

D.O. - Dissolved oxygen

Gray-shaded data points indicate values below method detection level (mdl), mdl value used for statistical analyses.

Yellow-shaded data points indicate the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit, value used for statistical analysis.

Orange - shaded data points indicate too many colonies were present. The numeric value represents the dilution factor times the maximum reportable number of colonies.

Purple-shaded data points indicate results based upon colony counts outside the method indicated ideal range.